School of Accounting

Four Essays on Corporate Governance, Ownership Structure and Capital Structure of GCC Firms

Baban Ibraheem Eulaiwi

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Declaration

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgement has been made. This thesis contains no material which has been accepted for award of any other degree or diploma in any university.

Baban Ibraheem Eulaiwi

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Abstract

The thesis comprises four essays on corporate governance and ownership structure in the Gulf Corporation Council (GCC). Specifically, these essays examine the role nad impacts of multiple directorships, nomination committee, joint-audit investment committee and cost of debt, investment efficiency, corporate life cycle and corporate cash holdings. Corporate governance policies and structures in emerging markets such as the GCC region vary considerably from those in developed countries due to the geo-political and religious dynamics of member countries. Although governance structures have been adopted from the Anglo-American systems, the pace of development of governance structures varies across member countries . However, the institutional, cultural and religious characteristics of the GCC are key ingredients that implicitly or explicitly underpin the effectiveness of corporate governance systems and practices in member countries. The four essays extend our knowledge of corporate governance and its relation with capital market decisions and structures in an emerging market context.

Chapter one provides background relating to the political and economic environment, institutional and capital markets development of the GCC. This chapter examines specific characteristics of the GCC institutional setting to provide context and to motivate the study.

The second chapter titled, "Multiple Directorships, Family Ownership and the Board Nomination Committee" explores the association between outside board directorships and family ownership concentration. The paper found a positive association between family ownership and the number of outside directorships held by board members. The results also suggest that the institutional factors of emerging economies such as those in the GCC can work against the benefits of multiple directorships, which could impair the quality of corporate governance.

The third chapter titled of the thesis "Joint-audit, political connections and cost of debt capital", investigate the association between joint-audit and cost of debt for a sample of non-financial publicly listed firms from the GCC. The beneficial impact of joint audit has not been convincingly documented. We provide further insights on this matter from GCC countries. We document a significantly negative effect of joint audit on cost of debt in GCC countries. This effect is most pronounced in cases where at least one of the joint audit firms is a Big 4 auditor. We then investigate

whether political connections with royal families moderate the association between joint audit and the cost of debt. Our results suggest that the beneficial effects of joint audits in terms of lower cost of debt are greater in firms with such political connections.

The fourth chapter titled "Investment Committee (IC) characteristics and Investment Efficiency" investigates the association between investment committee's characteristics and corporate investment efficiency. The paper found that the existence of an investment committee reduces both under- and overinvestment that financial expertise of committee members positively affects firms' investment efficiency. These findings are consistent with the assertion that a board investment committee assists with the monitoring and control of firms' investments.

Chapter five of the thesis titled "Investment committee, corporate cash holdings and corporate life cycle", investigates the association between voluntary formation of board investment committee (IC) and corporate cash holdings of firms over corporate life cycle. The paper suggests that existence of an IC increases corporate cash holdings in the growth and maturity stages of firms' life cycle progression compared to introduction/old (decline) stages. Governance, investment, strategy and resourcing/decision-making capabilities that differ across life cycle stages account for observed patterns.

Finally, chapter six provides a summary of the findings and further research direction.

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Dedication

I dedicate this thesis to my father (Ibraheem) and mother (Nila), my helpful and patient wife (Areej), Reem (Rima) and Alhassan (Hassoni) and to all my family members for their prayers and best wishes.

Publications Arising from This Research

Referred Journal Articles

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List of Abbreviations

ACCA	Association of Chartered Certified Accountants
AFAANZ	Accounting and Finance Association in Australia and New Zealand
BAH	Bahrain
BDI	Board Directors Institute
CFA	Chartered Financial Analyst
CII	Council for Institutional Investors
CIM	Chartered Investment Manager
CPA	Certified Public Accountant
CSR	Corporate Social Responsibility
EC	European Commission
GCC	Gulf Cooperation Council Countries
GFC	Global Financial Crisis
GDP	Gross Domestic Product
Hawkamah	Institute of corporate governance for the MENA region
IAS	International Accounting Standard
IFC	International Finance Corporation
IMF	International Monetary Fund
KSA	Saudi Arabia
KUW	Kuwait
LSE	London Stock Exchange
NACD	National Association of Corporate Directors
NYSE	New York Stock Exchange
OECD	The Organisation for Economic Co-operation and Development
OMN	Sultanate of Oman
QTR	the State of Qatar
S&P	S&P Capital IQ Database
UAE	United Arab Emirates

Chapter 1 Introduction

1.1 Introduction

The main purpose of this chapter is to provide the relevant background about the political and economic environment, institutional and capital markets development in Gulf Cooperation Council Countries (GCC). This chapter highlights specific characteristics of the GCC institutional setting as a way to provide context and to motivate the thesis. Moreover, the governance reporting, accounting and regulatory requirements are further discussed in this chapter. The chapter also highlights the contribution of the four essays to the corporate governance literature and finishes with an outline of the structure of the thesis.

1.2 The GCC institutional context

The GCC was founded on May 25, 1981 by six countries: Saudi Arabia, Oman, United Arab Emirates, Bahrain, Qatar, and Kuwait. The GCC is a regional organization of states that shares common geo-political and socio-economic objectives across the region (Bley & Saad, 2012; Al-Malkawi et al., 2014). The main aim of the formation of the GCC was to achieve economic and financial integration among member states (Espinoza, Prasad & Williams, 2011). Compared to developed and well-established emerging markets, the GCC financial and stock markets are considered one of the few fastest growing economies in the global economy depending mainly on oil production as a major source of revenue. The GCC region alone holds approximately 40-45% of oil reserves and 23% of the world's gas reserves (Al-Shammari, Brown and Tarca, 2008; Espinoza, Prasad & Williams, 2011; Bley & Saad, 2012). Thus the GCC region represents one of the major international players in the oil and gas industry. Notwithstanding, market capitalizations are relatively small in the GCC stock markets, and are also characterized by low and irregular trading of securities (Al Janabi, 2010), which in

turn force public and private firms to rely on bank borrowing as a major external financing source (Al-Shammari et al., 2008; Al-Yahyaee et al., 2011; Chowdhury & Maung, 2013).

Since the oil boom of the 1970s, oil revenues have played a strategic and significant role in the GCC financial and economic development. Over the past couple of decades, the GCC emerging markets have become the focus of much attention from individual and institutional investors as a result of the growing financial and economic developments (Al Janabi, 2010; Bley & Saad, 2011). These developments appeared in the mid-1990s driven mainly by oil revenues. Recently, the GCC has made significant effort to establish an environment that promotes private sector participation and increase diversification coupled with improved financial and legal institutional infrastructure underpinned by state-of-the-art technologies. These infrastructure and technological initiatives have attracted international investors into the GCC markets (Al Janabi, 2010). In addition, the liberalization of the capital markets through wide-range reforms such as those concerning capital flow regulations has also contributed to the advancement of the capital markets in the GCC. Bekaert et al. (2005) argue that free capital mobility provides more efficient capital allocation and risk diversification benefits through sharing of risky opportunities which in turn decreases return volatility. The changes in the financial regulations in the GCC markets offered local and foreign investors a greater access to the financial capital markets (Al Janabi et al., 2010).

Corporate ownership in GCC countries is highly concentrated in public sector institutions, holding firms, financial institutions, and family groups (Hawkama 2007-2012; Santos, 2015). Al-Shammari et al. (2008) reveal that ownership structure is generally categorised into three shareholder groups who own a substantial equity in the firms listed in the GCC stock exchange. These groups are the government and its agencies, institutional investors and dominant families. Consequently, individual investors normally have very limited shares in these firms (Hawkama, 2007-2012). For example, foreign investors are limited to 49 percent of total shares in Saudi Arabia, United Arab Emirates, Kuwait and Qatar. On the contrary, while direct foreign ownership of shares in Omani firms is limited to 70 percent of total shares, foreign ownership of shares in Bahrain firms is subject to government approval (Santos, 2015).

1.2.1 Corporate Governance in the GCC

The GCC countries are presently undergoing corporate governance and institutional reforms with an emphasis on the privatisation of government-owned firms. These corporate governance and institutional reforms are designed to expedite private sector participation to boost GCC member economic growth and development. The organizational and legal structures that shape policies and governance practices in developed economies may not necessarily be applicable to emerging markets such as those of the GCC (Fan, Wei & Xu, 2011).

Corporate governance practices and codes in the GCC are distinct owing to the complexities of their institutional and cultural settings, which differ from those of developed and well-established emerging economies (Bley & Chen, 2006; Baydoun et al. 2012; Mazaheri 2013). Although compliance with corporate governance codes is not mandatory in some GCC countries (e.g. Bahrain, Qatar and Kuwait), many firms in the GCC have implemented corporate governance practices (Hawkamah, 2010; OECD, 2011; Al-Malkawi, Pillai & Bhatti, 2014; Al-Hadi, Hasan & Habib, 2015). Several professional surveys carried out in the GCC suggest that corporate governance is one of the primary concerns in the GCC business environment among major foreign investors.

A number of institutions and regulatory bodies have established guidelines on how the region's public and private firms can implement corporate governance practices (Al-Malkawi, Pillai & Bhatti, 2014; Dalwai, Basiruddin & Abdul Rasid, 2015) for several reasons. First, the collapse of many firms in the region (e.g. the Al Gosaibi-Saad Group) as a result of their inability to fulfill their obligations to financial institutions during the global financial crisis prompted banks to require better corporate governance practices and greater disclosure and transparency,[1] which has led to the adoption of such practices by an increasing number of GCC firms. Second, as the GCC region has become the financial and commercial hub of the Middle East (Baydoun et al., 2012), the regulatory bodies in the GCC economies

[1] See (Al-Hadi, Hasan and Habib 2015) on bank regulations in GCC countries.

needs to play a vital role in the establishment and implementation of governance reforms. Third, both regulators and investors are aware that corporate governance provides several benefits to firms such as achieving high levels of market confidence, the protection of both foreign and minority shareholders, economic diversification, and investment opportunities (Fasano & Iqbal, 2003; Mina, 2007; Callen et al., 2014).

Recent amendments[2] to GCC governance codes such as those concerning board composition and committee formation, specialized nomination committees (NCs) in particular, have been incorporated. For instance, the governance codes of Kuwait, the KSA and the UAE mandate the formation of a NC, although NC composition varies depending on country-specific regulations. Oman's corporate governance code does not mandate NC formation, but the number of Omani firms establishing NCs is gradually increasing, particularly between 2005 and 2013. The corporate governance code in the KSA allows firms to form a combined NC and Compensation Committee (CC), whereas those in Qatar, Bahrain and Kuwait require firms to form a separate NC (these codes are called 'comply or explain' codes)3.

In addition, the current governance codes and regulations in the GCC do not mandate the formation of voluntary committees; however, the voluntary formation of board sub-committees does occur, e.g., GCC firms may voluntarily form risk committees to improve their risk reporting (Al-Hadi et al., 2016). Professional surveys highlight that boards in the GCC have nearly twice as many specialized (voluntary) committees as recommended (mandatory) committees, including audit, nomination, and compensation committees (BDI, 2011, 2013).

GCC governance codes vary markedly in their guidelines for the development of board committees. The newly implemented corporate governance code in Oman encourages firms to form board remuneration and nomination committees. Many firms have responded by also forming compensation, risk, and audit committees. The formation of ICs and its duties, however, has not been clearly

[2] Corporate governance rules were amended in GCC countries as follows: in the UAE in April 2010, Oman in March 2015, Kuwait in September 2013 and the KSA on January 5, 2009.

[3]According to (Uzun, Szewczyk and Varma 2004; Ruigrok et al. 2006), NCs are established for the purpose of identifying and selecting board members to improve board effectiveness, evaluate directors' qualifications and manage board composition to ensure its independence as a long-term function.

outlined in the governance code (Article 7-12 Chapter 4 subcommittees).[4] Similarly, corporate governance codes in the UAE encourage corporate boards to create audit and compensation committees, but UAE firms are not required to establish a separate IC (Article 6, 6(3) in New Code, and Article 118 in Commercial Companies Law 1984).[5] The recent corporate governance framework in Kuwait (Articles 138-153) encourages boards to form several board committees to address corporate governance compliance, internal control, risk, audit, and compensation; however, these codes do not require the formation of an IC.[6] Formation of an IC is encouraged in the corporate governance codes in Saudi Arabia,7 Bahrain,8 and Qatar.9

Although the GCC corporate governance codes do not regulate the formation of ICs, a large proportion of firms listed across the GCC stock markets have established voluntary ICs.[10] Once established, the presence of ICs requires firms to set up general criteria to regulate their investment decision-making processes. The specific duties of ICs may vary from firm to firm. In general, the main and most critical function is to oversee the firms' financial resources and its maintenance of operational capital, and to identify future investment opportunities with the aim of maximizing shareholder wealth. Managing market and liquidity risks is also an important investment function of ICs, which helps firms to optimize and maximize returns.[11]

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[4] https://www.cma.gov.om/documents/En/Charter2014.pdf
[5] http://linklaters.com/pdfs/Insights/UAECorporateGovernanceRegime.pdf
[6] https://www hawkamah.org/uploads/reports/KuwaitCorpGov_0207.pdf
[7] http://www.ecgi.org/codes/code.php?code_id=295
[8]http://www.moic.gov.bh/En/Commerce/DomesticTrade/Corporate%20Governance/Documents/bb9903e050a24fc6b65190cfcd637cd1BahrainCGCodeEN.pdf
[9] http://www.ecgi.org/codes/code.php?code_id=327
[10] Panel D of Table 1 shows that the number of firms that have established ICs in the GCC increased from 10 in 2006 to 215 at the end of 2013. Firms in Saudi Arabia (KSA) and Oman (OMN) have the highest number of ICs—43% and 22.3%, respectively—in the 2005–2013 period.
[11] Over the years, the GCC publicly listed firms have been motivated to formulate a common standard for the duties of ICs in relation to growth and investment opportunities. For example, in its 2005 annual report, the Qatar Telecom (Qtel) suggests that it's "Investment committee reviews all proposals for strategic investment opportunities. Investment committee reviewed Qtel's opportunities for growth in the region and initiated and recommended major investment opportunities for the company." In Bahrain, the National Hotels Company 2011 annual report acknowledges that the investment committee is responsible for identifying investment and growth opportunities that will return a sufficient yield to maximize shareholders wealth. In its 2012 annual report, the Southern Province Cement Company (SOCCO) in the KSA suggests that the Investment committee seek new investment opportunities in line with the company's growth requirements.

Firms with government and family ownership concentration, including business elites, tend to not comply with governance codes to the same degree as their counterparts ([IFC]/Hawkamah, 2008; Al-Hadi et al., 2016; Mazaheri, 2013); hence, public and foreign investors continue to face information asymmetry and agency problems (Mazaheri, 2013). The GCC region has also seen a marked increase in foreign direct investment (Mina, 2007). This internationalization of GCC listed firms makes them subject to greater scrutiny from stakeholders, regulators, and international institutional investors, who have recently been demanding greater governance and accountability from those firms (Abu-Nassar & Rutherford, 1996). The establishment of specialized ICs may be considered a response to these demands.

The four essays in this thesis specifically examine the roles and impact of multiple directorships nomination committee, joint-audit, investment committee characteristics, cost of debt, investment efficiency, corporate life cycle and corporate cash holdings. Corporate governance policies and structures in emerging markets such as the GCC region vary from those in developed countries due to a number of factors relating to the geo-political and religious dynamics of member countries. These institutional, cultural and religious dynamics are key ingredients that implicitly or explicitly underpin the effectiveness of corporate governance systems and practices in GCC member countries. Corporate governance is constantly receiving the required institutional and legal considerations aimed at improving the governance standards in the GCC. This reflects in recent amendments to corporate governance regulations despite the existence of "comply or explain" initiatives in some GCC countries. **The four essays in this thesis extend corporate governance and capital structure research in the GCC.**

1.3 OBJECTIVES OF THE STUDY

Extensive research in the area of corporate governance, accounting and finance show that special characteristics of specialized board committees of play a significant role in both developed and developing economies. For example, prior studies in GCC (e.g., Al-Hadi et al. 2015; Al-Hadi et al. 2016) provides evidence that

voluntary formation of sub-board committees (e.g., risk committee) reduces the information asymmetry and risk estimations. In addition, studies (e.g., Subramaniam, McManus, & Zhang, 2009; Al-Hadi, Hasan, and Habib 2016; Al-Hadi et al. 2016 among others) also indicate that the existence of a voluntary formation of board sub-committees can ensure credible communication and effective oversight of organizational risk management strategies, policies, and processes leading to improve firms investment efficiency. Moreover, although equity markets in GCC is grown significantly over the years, accompanied by an increase in the number of listed firms, the economic system in the GCC is still bank dominated. Both public and family firms strongly rely on bank financing (Al-Yahyaee, Pham and Walter 2011; Kern 2012; IMF 2013). Hence, it is important to understand the determinants of the cost of debt financing, as an outcome of direct economic consequence for corporations. Prior research has highlighted the benefits of joint audit in in introducing better financial reporting quality and lower earnings management (Marmousez, 2008; Bedard et al 2012; Lesage et al., 2012). Given that joint audit should improve audit quality because of shared audit efforts, however, empirical evidence has so far provided inconclusive evidence (Ratzinger-Sakel et al. 2015). Given the importance of the debt markets in the GCC, we consider the effect of joint audit on cost of debt as an attempt to extend this stream of literature by examining the effects of joint audit in the GCC region.This thesis provides further information on the determinants of directorships, cost of debt financing, investment efficiency and corporate cash holdings. In doing so, this thesis addresses the following four objectives using evidence obtained from the GCC firms.

- To examine the role of Nomination Committee on the propensity of outside directorships among family firms in GCC countries.
- To examine the effects of joint audit on firm-level cost of debt financing of the GCC firms.
- To assess the role of adapting specialized Investment Committee on firms' investment efficiency in the GCC countries.
- To examine the role of adapting specialized Investment Committee on corporate cash holdings in the GCC countries.

1.4 SUMMARY OF RESULTS AND SIGNIFICANCE CONTRIBUTIONS

This section discusses the summary of results and discussion, and the significant contribution for each objective separately.

1.4.1 Objective 1: Multiple Directorships, Family Ownership and the Board Nomination Committee: International Evidence from the GCC

The purpose of the essay that investigates objective 1 is to examine the association between family ownership and multiple directorships. Furthermore we test the impact of board nomination committee (hereafter NC) as concentration and specialization on multiple directorships among family firms in the Gulf Cooperation Council region. In particular, we test whether the existence of a NC has an impact on the multiple directorships held by board members. We also examine the relevance and significance of NC characteristics in explaining the extent of minimizing outside directorships.

1.4.1.1 Summary of results

The findings suggest that a stand-alone NC significantly improves the extent and quality of board of directors. In particular, we find a positive association between family ownership and the number of outside directorships held by board members. I find the association between family ownership and the number of outside directorships are positive and statistically significant ($p<.01$). Furthermore, we test for the effect of NC existence on the association between family ownership and outside directorships. We find that existence of NC supress the relationship between the multiple-outside directorships and family ownership. In particular, we find that the coefficient of the interactions between family ownership and NC are negatively associated with the multiple-outside directorships proxies and statistically significant ($p<.01$).Moreover, when NC characteristics are taken into account, we find that NC characteristics (e.g., independence, size and NC factor) are significantly (at $p<.01$) decease the number of outside directorships. In addition, results show that the NC plays a dominant role in enhancing corporate board monitoring. We use instrumental-variable (IV) techniques

together with ordinary least squares (OLS) estimation to mitigate endogeneity concerns. The IV results indicate that endogeneity cannot account for the positive relationship between the family ownership and multiple directorships.

1.4.1.2 Significance

The first objective of this study ("objective 1") contributes to the governance and disclosure literature in some important ways: First, we examine the incentive of family run business (through ownership or control) to appointing directors who hold multiple-outside seats (see e.g., Ferris, Jagannathan and Pritchard 2003; Perry and Peyer 2005; Fich and Shivdasani 2006; Hunton and Rose 2008; Jiraporn, Kim and Davidson 2008; Jiraporn et al. 2009; Jiraporn, Singh and Lee 2009; Field, Lowry and Mkrtchyan 2013). It provides empirical evidence that family own control firms increases the number of busy directors on corporate boards in GCC firms. Second, given the importance of internal corporate governance mechanism, we investigate the impact of special monitoring committee such as NC in reducing the influence of family control to appoint outside directorships among board of directors which in turn will mitigate agency conflicts between majority and minority shareholders in family run public businesses. Prior studies find mixed evidence regarding the association between outside-multiple seats and membership of internal board committees. For example, (Ferris, Jagannathan and Pritchard 2003; Jiraporn, Singh and Lee 2009) find that a director how holds multiple-outside seats, less likely to set in internal board committees such as audit committee(AC). On contrary, (Faleye, Hoitash and Hoitash 2011) find advising internal committees' assignment and memberships are compromised on the behalf to monitoring committee (e.g., audit and compensation committee), when firms have more outside-multiple seats. We argue that a specialised committee such NC may have a direct impact to determine or select the board's directors. NC is considered as a final channel to contract the directors for the boards. Our result confirms our view, that NC managed to supress the family control to increase multiple-outside seats in the board. Third, our study adds to the theory by distinguishing the influence of family ownership control with regard to Type II agency and institutional based theories. Prior researches (e.g., Ali, Chen and Radhakrishnan 2007; Gilson and Gordon 2003; Leung, Richardson and Jaggi 2014; Maury 2006; Villalonga and Amit 2006) have focused on agency type I

and Resources based-view (Peng 2002; Peng et al. 2009; Peng and Jiang 2010). The common attributes of monarchy political regime familyism economic in GCC such as kinship relations to maintain financing and facilitating business transactions; family businesses are given preference in business transaction. Favouritism is a preferred practice in hiring, promoting, and transferring assets (Mazaheri 2013). Families' intermarriages occur between established business families and elites. This suggests that business environment in the GCC countries is considered as family dominant and run businesses. Institutional based-view argues that if both formal and informal institutions used to govern firm behaviour, in situations where formal constraints are unclear or fail, the informal constraints will play a larger role in reducing uncertainty, providing guidance, and conferring legitimacy and rewards to managers and firms (Peng et al. 2009). To best of our knowledge, this is at first to use the Institutional based-view to explain the association between family ownership and busyness. Finally, this study has an implication and attention for regulators, investors and policy makers, particularly to protecting the minority shareholders.

1.4.2 Objective 2: Joint-audit, Political Connections and Cost of Debt Capital

In this essay that investigates "objective 2", the effects of joint audit (hereafter JA) on firm-level cost of debt of non-financial public listed firms in Gulf Cooperation Council (GCC) emerging countries. We examine whether the "joint audit" whereby two independent audit firms audit the financial statements with a shared audit effort provides investors with more confidential signals, in doing so, whether this reduces cost of debt financing. Moreover, we investigate whether political connections with royal families moderate the association between joint audit and the cost of debt. We hypothesize that the role of joint audit practices in reducing cost of debt financing more pronounce among politically connected firms.

1.4.2.1 Summary of results

We provide evidence to support the assertion that Joint audit reduces cost of debit financing. The beneficial impact of joint audit has not been convincingly documented (Marmousez, 2008; Bedard et al 2012; Lesage et al.,

2012). We provide further insights on this matter from GCC countries. We document a significantly negative effect (at p<.05 or better) of joint audit on cost of debt in GCC countries. This effect is most pronounced in cases where at least one of the joint audit firms is a Big 4 auditor. Furthermore, our regression results show that political connections with royal families moderate the association between joint audit and the cost of debt. This findings suggest that the beneficial effects of joint audits in terms of lower cost of debt are greater in firms with such political connections.

1.4.2.2 Significance

The second objective of this study ("objective 2") contributes to literature in some important ways: First, we enrich the scant literature on audit quality implications of joint audit. Prior evidence, using financial reporting quality and audit fees as the outcome variables, has provided mixed results on the benefits of joint audits. We consider the effect of joint audit on cost of debt, given the significance of the debt markets in the GCC. Our results shed light on the demand for audit, particularly joint audit, in an environment that differs in some very important respects from that found in the West. Second, we contribute to the literature on the contracting role of accounting from both the external auditing and debt financing perspectives. The GCC countries have unique financing arrangements that are characterized by high leverage where the main source of debt is bank financing (Al-Yahyaee, 2006; Chowdhury & Maung, 2013). In fact, loans from commercial banks are a major source of financing for GCC companies. Agency theory advanced by Jensen and Meckling (1976) implies that agents may employ joint auditors to reduce information asymmetry and, thus, agency costs. Companies with high leverage can be expected to appoint joint auditors to reduce agency costs by reassuring debtholders that their interests are protected. Hence, it is possible that GCC companies use joint audit to reduce agency costs and information asymmetry and, consequently, the cost of debt. Third, our study also contributes to the recent stream of audit studies examining the effects of country-level institutional factors and whether introducing a new settings can explain the association between JA and audit quality. Different settings (e.g., Sweden, Finlan, Denmark, and France) and audit regime have been applied to explain empirically this association and provided mixed results. From voluntary

regime (e.g., Zerni et al. (2012; Zerni, Kallunki & Nilsson 2010; Lesage et al. (2012); Ittonen and Peni 2012). Further, from mandatory JA regime studies also also provides mix results (Lesage, Sakel 2012; Sakel, Coulier and Ketunen and Lesage 2013; France et al. 2009; Holm and Thinggaard 2011; Lesage, Ratzinger-Sakel and Kettune 2016). One could argue about the relevance of an analysis of GCC countries, However, recent cross-countries' studies (e.g., Ittonen and Peni 2012; Lesage, Ratzinger-Sakel and Kettune2016) that have investigated the impact of JA have not incorporated any observations of firms from GCC countries. Pinkowtiz et al. (2006) suggest that differences in institutional factors across countries may be associates with differences in financial constraints, information asymmetry and agency problems across firm. We believe that doing so should contribute and complement and provide different insights into the investigations conducted by previous international studies.

1.4.3 Objective 3: Investment Committee Characteristics and Investment Efficiency

In this essay that investigates "objective 3", the effect of specialized investment committee on investment efficiency of non-financial firms belonging to six emerging markets in Gulf Cooperation Council (GCC) region. Specifically, we examine whether Investment Committee (thereafter IC) characteristics reduces agency related issues stemming from under- and over-investment. We also investigate whether the presence of both voluntary IC and forging ownership improves firms' investment efficiency.

1.4.3.1 Summary of results

Using population of non-financial firms listed in the six GCC capital markets for the 2005–2013 period, we found that the existence of an investment committee reduces both under- and overinvestment that financial expertise of committee members positively affects firms' investment efficiency. In particular, our results show that specialized investment committee is negative and statistically significant ($p<0.01$) for all investment efficiency estimates. These findings are consistent with the argument that the existence of an IC reduces information asymmetry and limits

managerial opportunistic behavior related to participation in value-destroying investments. Our results also suggest that the effect of an IC in suppressing under- and overinvestment is more pronounced in firms with high foreign ownership concentrations.

1.4.3.2 Significance

This study makes several important contributions. First, to the best of our knowledge, this study is the first to examine the association between IC characteristics and investment efficiency. Further, prior research on investment committees in the U.S. has not evaluated the effect of governance characteristics of those committees on investment efficiency (see e.g. Collie, 2014; Ellis, 2011; Kearney, 2014; Yoder, 2011). Second, we find that ICs assist firms in mitigating the risks associated with under- and overinvestment, thereby improving investment efficiency. Our findings suggest that ICs reduce information asymmetry and suppress managerial opportunistic behavior that may lead to value-destroying investment decisions. Third, we add to the literature on investment management and corporate governance by exploring an alternative channel through which ICs can add value to firms: improved investment efficiency. In particular, this study extends the governance literature by examining how IC characteristics affect investment efficiency. Fourth, we draw our sample from six countries that comprise the GCC to examine the association between existence of an investment committee, and their characteristics, and firms' investment efficiency. We are then able to capture differences in governance, institutional, political and other country level effects within an emerging market context. Prior studies on the effect of governance factors on firms' financing decisions have largely been done on a single country basis. The GCC as a whole has newly adopted governance practices and face similar issues around accountability, risk management, politics and ownership structures. We also contribute to the governance literature by demonstrating that improvements in governance structure at the firm level through use of an investment committee are important in an emerging market context such as the GCC where governance structures and supporting regulations are evolving. Finally, our results are likely to be of interest to regulators, stock exchanges, capital suppliers and shareholders when they evaluate firm performance or the effect of governance and regulation in the GCC context.

1.4.4 Objective 4: Investment committee, corporate cash holdings and corporate life cycle

The purpose of the essay that investigates "objective 4" is to examine the impact of investment committee concentration and specialization, and the stages of a firm's life cycle in affecting corporate cash holding in the Gulf Cooperation Council region. In particular, we test whether the existence of an IC has an impact on the extent and quality of corporate cash holding. I also examine the relevance and significance of IC characteristics in explaining the corporate cash holdings. Furthermore, I study whether the role of the IC in affecting cash holdings varies with different stages in a firm's life cycle.

1.4.4.1 Summary of results

We investigate the association between voluntary formation of board investment committee (IC) and corporate cash holdings of non-financial firms over the corporate life cycle stages for a large sample of Gulf Cooperation Council (GCC) firms during 2005–2016. We find that IC increases corporate cash holdings in growth and maturity stages of firm, compared to introduction, shake-out and decline stages. This suggests that each stage would manifest integral complementarities among governance, investment strategy and corporate decision making; that corporate complexity would cause each stage to exhibit certain significant differences from all other stages. These results have important implications for investors, policy makers and regulators. Our findings are robust to various econometrics specifications. We investigate the association between voluntary formation of board investment committee (IC) and corporate cash holdings of non-financial firms over the corporate life cycle stages for a large sample of GCC firms during 2005–2013. The results show that IC increases corporate cash holdings in growth and maturity stages of firm, compared to introduction, shake-out and decline stages. This suggests that each stage would manifest integral complementarities among governance, investment strategy and corporate decision making; that corporate complexity would cause each stage to exhibit certain significant differences from all other stages. These

results have important implications for investors, policy makers and regulators. Our findings are robust to various econometrics specifications.

1.4.4.2 Significance

This study contributes to the extant literature in at least two dimensions: Firstly, it advances our understanding of the role of corporate governance in terms of IC on cash holding in emerging markets setting. The GCC countries provide a unique context compared to most developed countries. Although the GCC corporate governance codes do not regulate the formation of ICs, a large proportion of firms listed across GCC stock markets have established voluntary ICs. Moreover, even though the establishment of ICs is voluntary in the GCC, the presence of ICs requires firms to set up general criteria to regulate investment decision-making processes. In general, the main and most critical function of the ICs is to oversee the firms' financial resources, maintenance of operational capital, and identifying future investment opportunities with the aim of maximizing shareholders wealth. Most importantly, managing market and liquidity risks becomes an important investment function of ICs in order for firms to optimize and maximize returns.[12] Secondly, this paper attempts to combine two strands of literature that have usually been studied separately (i.e., investment decisions through different life cycle stages and corporate governance). Our empirical results suggest that the effect of ICs on cash holdings differs significantly across the firm life cycle stages. In particular, we find that ICs induce more cash holding for firms in the growth and maturity stages, while it is lower in the introduction and decline stage. These results imply that ICs can be effective in optimal allocation of resources through different stages by aligning the interests of investors and managers.Our paper is important for several regulators (e.g., policy makers and governance authorities) in the GCC. Our paper suggests that

[12] The GCC public listed firms have over the years been motivated to formulate a common standard concerning the duties of ICs in relation to growth and investment opportunities. For example, the Qatar Telecom (Qtel) in its 2005 annual report suggest that it's "Investment committee reviews all proposals for strategic investment opportunities. Investment committee reviewed Qtel's opportunities for growth in the region and initiated and recommended major investment opportunities for the company". In Bahrain, the National Hotels Company 2011 annual report acknowledge that the investment committee is responsible for identifying investment and growth opportunities that will return sufficient yield to maximize shareholders wealth. The Southern Province Cement Company (SOCCO) in the KSA in its 2012 annual report suggests that the Investment Committee seeks for new investment opportunities in line with the company growth requirements.

corporate governance effectiveness (i.e., specialised board committees) on corporate financial policy varies and depends on stages of firm's life cycle.[13]

1.5 Structure of thesis

This thesis is organized into six chapters comprising four interconnected essays on corporate governance and an introduction and conclusion chapter. **Chapter one** provides the relevant background about the political and economic environment, institutional and capital markets development in the Gulf Cooperation Council (GCC). The chapter highlights specific characteristics of the GCC institutional settings as a way to conceptualize the study context. The chapter will end with the contribution of the four essays to corporate governance literature. **Chapter two** presents the first essay titled "Multiple Directorships, Family Ownership and the Board Nomination Committee", which explore the association between outside board directorships and family ownership concentration, and the role of nomination committee. **Chapter three** presents the second essay titled "Joint-audit, political connections and cost of debt capital", which examine the association between joint-audit and cost of debt and the role of political connections with royal families. **Chapter four** presents the third essay titled "Investment Committee Characteristics and Investment Efficiency", which investigate the association between a board investment committee's characteristics and corporate investment efficiency. **Chapter five** presents the final essay titled "Investment committee, corporate cash holdings and corporate life cycle", investigate the association between voluntary formation of board investment committee (IC) and corporate cash holdings of firms over the corporate life cycle. C**hapter six** provides a summary of the findings and further research directions.

[13] For instance, firms in growth stages, have extensive types of investment, and may suffer management's incentive to exasperate corporate cash, pre-requestions and incentive of empire building. Therefore, a specialized board committees (e.g., IC, and Risk Committee) are beneficial in such a stage.

Chapter 2

Multiple Directorships, Family Ownership and the Board Nominiation Committee: International Evidence from the GCC

2.1 Introduction

Firms with board members who hold multiple outside directorships have been shown to be underperformers (Core, Holthausen & Larcker, 1999; Ferris, Jagannathan & Pritchard, 2003; Fich & Shivdasani, 2006; TNI, 2008; Falato, Kadyrzhanova & Lel, 2014). Prior studies show, for example, that outside directorships may reduce firm value (Ferris, Jagannathan & Pritchard, 2003; Jiraporn, Kim & Davidson, 2008), weaken a board's monitoring ability (Fich & Shivdasani, 2006), diminish its advisory capacity (Jiraporn, Singh & Lee, 2009), reduce the effectiveness of outside directors as corporate monitors (Core, Holthausen & Larcker, 1999; Shivdasani & Yermack, 1999) and influence firms' financing choices and ability (Gilson, 1990). Multiple outside directorships can thus reduce investor confidence (Fich & Shivdasani, 2006), diminish creditor trust (Cooper & Uzun, 2012), result in the transfer of wealth from minority to majority shareholders (Leuz, Nanda & Wysocki, 2003), minimize the board's ability to alleviate information asymmetry issues (Armstrong, Guay& Weber, 2010) and possibly lead to an increase in agency costs (Shivdasani & Yermack, 1999; Core, Holthausen & Larcker, 1999; Jensen & Meckling, 1976). Prior research (e.g., Mike Burkart, Panunzi & Shleifer, 2003) has also suggested that multiple outside directorships may affect the efficiency and effectiveness of board functioning in general and the role of various board committees in particular.

The contentious nature of multiple outside board directorships has initiated several reviews by governance agencies in the Gulf Cooperation Council (GCC) of the risks associated with them (Council for Institutional Investors - CII (1998); National Association of Corporate Directors- NACD 1996, and The National

Investor- TNI 2008).[1] The objective of the study is to investigate the association between multiple outside board directorships and family ownership concentration in listed non-financial GCC firms. We further assess whether the existence and quality of a nomination committee (NC) suppresses the capacity of boards with family members to include other members with multiple outside directorships.

The economic, institutional and socio-political environment of the GCC region makes it an interesting setting in which to examine the corporate role of NCs and their ability and incentives to develop a board structure that is in the firms' best interests for several reasons. First, the recent literature (e.g., Sirmon et al., 2008) suggests that the family and/or founding owners of GCC firms use their influence to enhance their voting power over others and to intervene in the board's selection of managers and directors for the firm, thus controlling the decision-making process.[2] Studies (Maury, 2006; Ali, Chen & Radhakrishnan, 2007; Leung, Richardson & Jaggi, 2014) also provide evidence to suggest that family and/or founder ownership results in Type II agency problems, whereby wealth is transferred from minority to family shareholders. Some 60% of the equity markets in the GCC are controlled by family firms (TNI, 2008). Hence, the concentration of family ownership is much higher in the GCC than in most developed countries, where firms are owned by a diverse group of investors (Musa, 2002). The implication is that GCC firms may face pronounced conflicts between minority and majority shareholders. In addition, professional surveys (e.g., The National Investor TNI, 2008) indicate that multiple directorships are a common phenomenon in GCC listed companies, which prior research suggests may undermine and weaken board efficiency (Core, Holthausen & Larcker, 1999; Ferris, Jagannathan & Pritchard, 2003; Fich & Shivdasani, 2006). Hence, it is not unreasonable to assert that boards with high levels of family ownership select busier directors, i.e., those with multiple external directorships, to

[1] For instance, with regard to corporate governance, a guideline issued by the Council for Institutional Investors (CII 1998) recommends that a director should not serve on more than two other boards. The National Association of Corporate Directors (NACD 1996) is more flexible, indicating that a director who is the board member of a firm should not have directorship seats and serve on more than three boards. Corporate governance in K.S.A requires a single director should not seat in more than 5 outside directorships, and in Bahrain not excessed more than 3 outside directorship. In addition, the Institute for Corporate Governance (Hawkamah 2008) noted that directors with multiple outside directorships face difficulties in devoting enough time to all of the firms they serve.

[2] For example, Villalonga and Amit (2006) find family firms more likely to be headed by individuals who hold both the CEO and chair positions.

assist with monitoring. If this is the case, then we can expect family ownership to be associated with boards comprising members with multiple outside directorships.

The GCC model of corporate governance has been influenced by the Anglo-American model, which is generally referred to as the "market model," and focuses on maximizing shareholder wealth. The market model is a one-tier system in which a shareholder-elected board of directors is the highest governing body, and individual shareholders do not directly affect the direction of the firm (Keasey & Wright, 1993). Consequently, the role of independent outside directors and ownership structure, among other factors, are important elements in monitoring managerial performance.[3] In the market model, individual shareholders cannot directly influence the direction of the firm, which may give family owners the upper hand in controlling the firm's affairs. Family owners holding a majority of voting shares are likely to have personal interests and to use their power to take private advantage by appropriating resources, thereby expropriating the rights of minority shareholders (Villalonga & Amit, 2006). In the GCC region, individual shareholder power is diluted, and family power is strong (TNI, 2008). According to a 2008 TNI report, 25-75% of GCC firms have at least two board members from the same family and for some firms, families account for 100% of board constituents. The adoption of the market model in the GCC, where family ownership concentration and board control are both prominent, can exacerbate agency-related problems. In addition, the differences between the GCC model of governance and those of other developed and developing markets suggest the possibility that corporate governance characteristics may not have the same level of influence on the association between multiple directorship and family ownership concentration as documented in previous studies.

Second, corporate governance practices and codes in the GCC are distinct owing to the complexities of the institutional and cultural settings that distinguish its member states from other developed and well-established emerging economies (Bley & Chen, 2006; Baydoun et al., 2012; Mazaheri, 2013). For example, compliance with corporate governance codes is not mandatory in most GCC countries. In

[3] In contrast, the developing markets of Turkey and Korea, among others, have been described as more akin to the German-Japanese model of corporate governance (Robertson 2009), which serves the interests of a wider range of stakeholders, including shareholders, employees, and creditors. The German-Japanese model is a two-tier system in which a board of supervisors defines the interests of stakeholders and appoints a management board charged with conducting the day-to-day operations of the firm. As overlapping board responsibilities are permitted, members of the board of supervisors must be independent of management.

particular, these codes are silent on the issue of multiple directorships, and the number of outside directorships permitted is not clearly delineated. For example, in the KSA and Bahrain, the number of outside board seats allowed is five and three respectively, but no number is specified in the corporate governance codes of other GCC countries. The leniency or silence in some of the GCC codes concerning multiple outside directorships may afford family-controlled firms more room to extract benefits from minority shareholders.

Third, emerging economies, such as those in the GCC, provide a particularly appropriate laboratory for studying the issue of multiple directorships. Developed economies such as the U.S. and U.K. have institutional investor organizations with a relatively long history of actively seeking to limit the number of multiple directorships, and firms may be compelled to hire directors in accordance with recommended standards (Sarkar & Sarkar, 2009). In addition, directors themselves may share the view that taking up multiple directorships is not feasible, and consequently voluntarily seek to limit the number of board positions they accept (Korn-Ferry International, 1998). In such a situation, the frequency of multiple directorships is likely to be endogenously and nearly optimally determined, meaning that cross-sectional data may exhibit little variation within or across firm boards (Demsetz & Lehn, 1985), which in turn makes it difficult to identify the relationship between director busyness and family ownership concentration empirically.

Fourth, the effect of family ownership concentration in public firms is a growing field of interest in the finance and accounting literature. Because such concentration can have important implications, empirical evidence is of paramount importance for judging its final effect and for orienting regulation. To date, the empirical literature on family ownership concentration has focused primarily on the U.S., starting with Shleifer & Vishny (1986). More recently, (Anderson & Reeb, 2003) show that family ownership concentration is an effective organizational structure in the U.S., whereas (Fich & Shivdasani, 2006) found multiple directorships to adversely affect firm performance, as manifested in a positive market reaction following the departure of a busy director. There is a dearth of research on the effect of family ownership concentration in public firms outside the U.S. (Gomez-Mejia, Makri & Kintana, 2010). Daily, Dalton & Rajagopalan (2003, p.155) state that "agency effects may function differently in this context and prior findings from non-family samples may not readily generalize into this setting." There is certainly little

comprehensive evidence on this important issue in the GCC context. To the best of our knowledge, this study is the first to examine the association between multiple outside directorship and family ownership concentration and to assess whether the formation of separate NCs affects the relationship between family ownership and the appointment of busy directors in the GCC.

Fifth, there is an increasing drive toward improving corporate governance regimes across the GCC in line with the region's rapid economic growth and growing demand from regulators and international institutional investors for greater transparency and accountability. Evidence of governance reforms across the GCC comes from the burgeoning number of conferences and surveys on corporate governance and board of director quality in the region,[4] as well as the number of codes and guidelines being issued and corporate governance taskforces being formed in select GCC countries. In recent years, the GCC region has also seen a marked increase in foreign direct investment (Bley & Chen, 2006). Further, there has been a general move toward opening the doors to international investment, with many new initiatives appearing in the wake of the global financial crisis (Bley & Saad, 2011).

Finally, the GCC has strengthened its regulatory and financial institutions and adopted more reforms concerning the business environment. For instance, in 2013, the World Bank declared the KSA to be the region's highest-ranking economy in terms of the "overall ease of doing business," placing it globally in the 22nd spot among 185 countries (Mazaheri, 2013). The region's political setting (family monarchical system) provides us with a very interesting setting in which to investigate the association between family ownership and board monitoring, as that political setting is considered to be one of the main reasons for GCC countries' initiation of business environment reforms. As (Mazaheri, 2013, p.296) writes, "monarchies are better able to solve the credible commitment problem between the government and existing private sector elites than non-monarchical, authoritarian states."

To sum up, the institutional aspects of corporate governance in the GCC bring new and interesting dimensions to the association between multiple directorships and concentrated family ownership. In addition, GCC markets have become increasingly important over the years for investors seeking higher returns

[4] See Hawkamah website [Link: http://www.hawkamah.org/]

and better opportunities and for countries seeking investment projects, suggesting greater demand for directors with high-quality monitoring and advising attributes (Baydoun et al., 2012).

2.2 Background: Family Ownership and Corporate Governance in the GCC Region

The emerging economies of the GCC collectively constitute a rapidly growing group of developing countries that derive a considerable amount of their income from oil exports (Al-Malkawi, Pillai & Bhatti, 2014; Al-Shammari, Brown & Tarca, 2008) and that have rapidly expanding equity markets. Economic development in the GCC has been accompanied by an increase in the number of listed firms, which grew from 473 in 2005 to 705 in 2013.[5] GCC stock markets have recently attracted international investors in line with significant changes in member states' economic and financial environment. The liberalization of GCC capital markets has taken place through several reforms in regulation and governance.[6]

2.2.1 Family Ownership

The literature examines how the ownership structure of firms affects corporate board monitoring and effectiveness (Mak & Li, 2001; Fama & Jensen, 1983), documenting that family control introduces agency problems for minority shareholders and rent-seeking activities. For instance, (Villalonga & Amit, 2006) argue that agency conflicts are costlier for firms that are owned or controlled by family groups. Andres, Bongard, & Lehmann (2013) demonstrate that firm value decreases when family groups impose control over management and directors. In addition, (Shleifer & Vishny, 1997; Anderson & Reeb, 2003; Maury, 2006) reveal that in countries in which shareholder protection and transparency are weak, the potential for expropriation by family controllers may erode value for minority shareholders.

[5] See Gulfbase website at http://www.gulfbase.com/

[6] These reforms are "low interest rates, minimum translation of costs and uncertainty about capital repatriation, and new laws and governance to protect property rights, reduce corruption and ease ownership restrictions" (Al-Hadi, Hasan and Habib 2015, p.67).

Different shareholder groups typically have substantial equity ownership in companies listed on the GCC stock exchanges (Al-Shammari, Brown & Tarca, 2008). These groups include governments and their agencies, dominant families, institutional investors, and minority shareholders. The GCC's business environment is considered to be family-dominated, and family-controlled firms are represented by a small number of family investors (Al-Yahyaee, Pham & Walter, 2011). Some 60% of GCC firm equity is owned by just 20[7] large family groups (TNI, 2008; Hawkamah, 2013). The degree of family ownership concentration is much higher in GCC firms than in their counterparts in the U.S. and in other developed and developing countries. In fact, most businesses in the GCC have a few controlling shareholders, and family ownership is predominant (Saidi, 2004). The diverse shareholder ownership common in Western countries, and the resulting separation of ownership and control that highlights the stewardship and monitoring aspects of non-executive directors' functions, is limited in the GCC. The GCC family ownership concentration ratio by country is high, and is maintained by such practices as making rights issues to existing shareholders and inviting wealthy, influential families to subscribe to shares in IPOs (Musa, 2002). Yasin, Shehab, & Saidi (2004) suggest that the high degree of concentrated family ownership in the GCC undermines the principles of good corporate governance.

Family groups launched businesses in the GCC at an early stage of national development, and have managed to maintain ownership over several generations (Anderson & Reeb, 2004). Members of these controlling families routinely occupy the highest position in the firm (e.g., chairperson or CEO), and have incentives to appoint other family members to firm boards and management teams (Hawkamah, 2013; Jaggi, Leung & Gul, 2009). Therefore, the family-controlled publically listed firms in GCC economies are subject to severe Type II agency conflicts between minority and majority shareholders and pronounced rent-seeking problems, which together work to diminish the effects of corporate governance practices (Ali, Chen & Radhakrishnan, 2007).

[7] As the degree of ownership/powerful concentration in the hands of a few families is very high in GCC equity markets, a (TNI 2008) aggregates the top ten families in each market and each country. The survey lists these powerful families as a collection of individuals from the same country with the same surname (family name). See Appendix II for detailed information.

2.2.2 Corporate Governance

The organizational and legal structures that shape policies and governance practices in developed economies may not necessarily be applicable to emerging markets such as those of the GCC (Fan, Wei & Xu, 2011). Corporate governance practices and codes in the GCC are distinct owing to the complexities of their institutional and cultural settings, which differ from those of developed and well-established emerging economies (Bley & Chen, 2006; Baydoun et al., 2012; Mazaheri, 2013). Although compliance with corporate governance codes is not mandatory in some GCC countries (e.g., Bahrain, Qatar and Kuwait; see Appendix I), many firms in the GCC have implemented corporate governance practices (Hawkamah, 2010; OECD, 2011; Al-Malkawi, Pillai & Bhatti, 2014; Al-Hadi, Hasan & Habib, 2015). Several professional surveys carried out in the GCC suggest that corporate governance is one of the primary concerns in the GCC business environment. A number of institutions and regulatory bodies have established guidelines on how the region's public and private firms can implement corporate governance practices (Al-Malkawi, Pillai & Bhatti, 2014; Dalwai, Basiruddin & Abdul Rasid, 2015) for several reasons. First, the collapse of many firms in the region (e.g., the Al Gosaibi-Saad Group) as a result of their inability to fulfill their obligations to financial institutions during the global financial crisis prompted banks to require better corporate governance practices and greater disclosure and transparency,[8] which has led to the adoption of such practices by an increasing number of GCC firms. Second, as the GCC region has become the financial and commercial hub of the Middle East (Baydoun et al., 2012), the regulatory bodies and legal environments in GCC economies are playing a vital role in the establishment and implementation of governance reforms. Third, both regulators and investors are aware that corporate governance provides several benefits to firms such as achieving high levels of market confidence, the protection of both foreign and minority shareholders, economic diversification, and investment opportunities (Fasano & Iqbal, 2003; Mina, 2007; Callen et al., 2014).

Recent amendments[9] to GCC governance codes such as those concerning board composition and committee formation, specialized NCs in particular, have been incorporated in most of the GCC. For instance, the governance codes of

[8] See (Al-Hadi, Hasan and Habib 2015) on bank regulations in GCC countries.
[9] Corporate governance rules were amended in GCC countries as follows: in the UAE in April 2010, Oman in March 2015, Kuwait in September 2013 and the KSA on January 5, 2009.

Kuwait, the KSA and the UAE mandate the formation of an NC, although NC composition varies depending on country-specific regulations. Oman's corporate governance code does not mandate NC formation, but the number of Omani firms establishing one gradually increased between 2005 and 2013 (see Table 5A). The corporate governance code in the KSA allows firms to form a combined NC and CC, whereas those in Qatar, Bahrain and Kuwait require firms to form a separate NC (these codes are called *comply or explain* codes).[10] In this study, we investigate one important aspect of the recent corporate governance reforms in the GCC, namely, the adoption of NCs.[11]

2.3 Literature Review and Hypotheses Development

2.3.1 Multiple Directorships

Multiple directorships (a proxy for board busyness) refer to the number of outside directorships (i.e., three, four or five) held by the board members of a focal firm (Fich & Shivdasani, 2006; Jiraporn et al., 2009).[12] Prior research shows that outside directorships can be valuable to a firm. For instance, (Fama & Jensen, 1983) argue that firms are motivated to appoint more outside directors to improve the reputation and monitoring capabilities of their directors. Empirical studies have also documented evidence to show that these attributes are valued differently depending on a firm's operation cycle. For example, (Field, Lowry & Mkrtchyan, 2013) suggest that during IPOs, firms that lack public market experience are most likely to depend on expert directors with multiple outside directorships, which may prove essential to their ability to compete and use resources effectively. Furthermore, prior studies (e.g., Gilson, 1990; Wilson, Wright & Scholes, 2013) find that firms with multiple outside directorships are able to obtain financing more readily during periods of financial distress through their business and relation ties.

[10] See Appendix I.
[11] According to (Uzun, Szewczyk and Varma 2004; Ruigrok et al. 2006), NCs are established for the purpose of identifying and selecting board members to improve board effectiveness, evaluate directors' qualifications and manage board composition to ensure its independence as a long-term function.
[12] We use "busyness" and "multiple directorships" interchangeably in this paper.

Conversely, there is also research suggesting that appointing busy directors to a board can undermine or at least weaken board efficiency (Core, Holthausen & Larcker, 1999; Ferris, Jagannathan & Pritchard, 2003; Fich & Shivdasani, 2006). Ferris, Jagannathan, & Pritchard (2003) find that reputable directors are unlikely to take directorships in poorer performing firms. Jiraporn, Kim, & Davidson (2008) investigate the relation between multiple directorships and firm diversification, and find that firms with more outside board directorships engage in more diversification, which may diminish firm value. (Ferris, Jagannathan & Pritchard, 2003; Fich & Shivdasani, 2006) contend that directors are overcommitted when they hold several directorships, thus weakening firm performance. Furthermore, (Hunton & Rose, 2008) investigate busy directors' responses to auditor recommendations, and find that relative to directors who hold a single directorship directors with multiple outside directorships have less incentive to accept an auditor's restatement recommendations.

Several studies also address the association between multiple outside directorships and CEO compensation and firm performance. In this vein, Core, Holthausen, & Larcker (1999) show that multiple outside directorships are likely to weaken board monitoring and create avenues for CEOs to benefit from excessive rewards, resulting in poor firm performance. We argue that family owners have an incentive to rely on directors with multiple directorships to reduce the risk of their control being diminished.

The requirements on multiple outside directorships in GCC corporate governance codes are also not clearly delineated. For example, in the KSA and Bahrain, the numbers of outside board seats allowed are five and three, respectively, but the number is not specified in the codes of other countries (TNI, 2008). This silence in many GCC corporate governance codes may provide more power for family owners to extract benefits from minority shareholders, which is consistent with our main hypothesis. In addition, the differences in GCC codes regarding multiple directorships facilitate our ability to examine whether countries that state the number of outside board seats have better governance than those that do not.

2.3.2 Hypotheses Development

2.3.2.1 Association between Family Ownership and Multiple Directorships

Multiple directorships have received considerable attention in the literature and in governance surveys because of the fragmented nature of the monitoring and disciplining role that may occur if board members take on too many directorships (Ferris, Jagannathan & Pritchard, 2003; Fich & Shivdasani, 2006). Busy directors have more incentive to shirk their core responsibilities, which may include, for instance, attending and contributing fully to the committees to which they have been appointed members (e.g., Jiraporn, Singh & Lee, 2009), and they have less incentive or time to attend board meetings (Jiraporn et al., 2009).

In this study, two theories are applied to investigate the association between family ownership and control and the existence of multiple outside directorships: Type II agency theory and institutional theory. Several studies suggest that Type II agency theory is useful for explaining governance in family-owned and family-controlled firms (e.g., Ali, Chen & Radhakrishnan, 2007; Maury, 2006; Leung, Richardson & Jaggi, 2014). This theory suggests that controlling shareholders engage in activities designed to serve their own interests and, if families, to maximize family wealth (Fan & Wong, 2002), including increasing their ownership stake (Maury 2006), strengthening their voting power (Villalonga & Amit, 2006), reducing corporate governance disclosures (Ali, Chen & Radhakrishnan, 2007), and decreasing firm diversification to enjoy personal control and to exercise their authority (Gomez-Mejia, Makri & Kintana, 2010), thereby maintaining control over minority shareholders.[13]

Previous studies also find that family control reduces board monitoring. Anderson & Reeb (2004) find that family owners weaken board monitoring by reducing the number of independent directors (Jaggi & Leung, 2007) and that family directors reduce the number of board meetings. Additionally, Villalonga & Amit (2006) report that family-owned or controlled firms usually combine the CEO and chair positions.

[13] Researchers also find that family firms to be more likely to control executive positions by exercising managerial control (Claessens, Djankov and Lang 2000; Andres 2008).

Family shareholders are likely to appoint directors who will not act against their wishes (Jaggi, Leung & Gul, 2009). Prior studies show that busy directors attend fewer meetings, fail to ask hard questions, and place less importance on and dedicate less effort to monitoring activities (Walsh & Seward, 1990). In contrast, less busy directors may protect minority shareholders by contributing more time and effort to monitoring the board (Leung, Richardson & Jaggi, 2014), a view supported by Lane et al. (2006) who find that busy directors are more faithful to controlling family owners.

Given the social power and control of family-controlled or family-owned firms in the GCC, family owners are likely to preserve control and maximize family/personal wealth (agency type II), which suggests that we should expect family-controlled groups to appoint directors with insufficient time, experience and spare effort to question board-directed strategies and plans (Villalonga & Amit, 2006; Jiraporn, Kim & Davidson, 2008; Jiraporn, Singh & Lee, 2009).

In addition to agency theory, the power and control of family-controlled and family-owned firms may be viewed from the perspective of institutional theory (Peng et al. 2009), which suggests that when formal constraints (laws, rules and regulations) are unclear or fail, informal constraints (culture, norms and values) take over that role by providing guidance and reducing uncertainty. Thus, control by family-owned firms may substitute for regulations and governance systems in the GCC. The management literature (Peng et al., 2009; Peng & Jiang, 2010) suggests that the institution-based view may explain the effects of societal norms and values on business transactions. This effect is evident in a range of emerging markets such as India, China, Indonesia, Argentina, Hong Kong, Malaysia and Taiwan, which are characterized by weak regulatory regimes (e.g., weak investor protection and governance regulations), strong social ties and the substitution of local family networks for market regulations (e.g., corporate governance and investor protection regulations). For instance, Kedia, Mukherjee & Lahiri (2006) reveal that family and business groups rely on their informal networks and alliances to influence formal regimes.

In the GCC, family-controlled businesses are considered an important part of government economic reforms. Strong tribal customs and prominent business family names lead governments in the region to consider family interests in economic reforms and regulatory enforcement (Khalifah al-Yousef, 2008). For example,

Mazaheri (2013) shows that the social structures of GCC communities are dominated by tribal culture, cronyism and close personal ties. Furthermore, the institution-based view and strong secrecy culture of GCC society is reflected in the many family controlling shareholders who have a strong desire to maintain their families' privacy, confidentiality and autonomy. Therefore, family shareholders are less likely to share information, power and management with busy board members (who exert less effort) than with other directors (who have more time and incentive for in-depth investigations)[14] (Pearl Initiative 2012).[15] Therefore, we hypothesize:

H1: *GCC listed firms with highly concentrated family ownership and control are positively associated with the presence of directors with multiple directorships on their corporate boards.*

The literature suggests that board efficiency is associated with board structure and the functioning of board committees (Harrison, 1987; Brick & Chidambaran, 2010; Tao & Hutchinson, 2013). The formation of board committees attracts scholars and regulators because of the central role played by committees in setting objectives, monitoring and advising the firm (Harrison, 1987; Carter et al., 2010). For instance, Klein (1998) investigates the relationship between the presence of specialized board committees and the role of directors in those committees, and documents a positive association between the existence of financing and investment committees and the firm's stock market performance. This finding supports the notion that decisions made by groups (e.g., committees) are of higher quality than those made by individuals (e.g., family members) (Hill, 1982).

Harrison (1987) reveals that internal board monitoring committees such as NCs are responsible for providing shareholders with an independent view of corporate affairs. For instance, an NC promotes corporate legitimacy and also provides objectivity in decision-making, which may include the interests of individual board members, particularly with regard to the selection and retention of directors. Given that busy directors are less likely to engage in monitoring (Core, Holthausen & Larcker, 1999), institutional investors and shareholders view the

[14] Particularly with regard to the issues of firm management and the transfer of power from one generation to the next.

[15] The Pearl Initiative issued a report on the governance of family businesses in GCC countries in 2012 based on analytical study of more than 100 interviews with senior figures in these businesses in collaboration with PricewaterhouseCoopers (PWC). See http://www.pearlinitiative.org.

presence of an NC as an important signal of the board's ability to build and maintain independence (Shivdasani & Yermack, 1999). In the U.S., for example, the corporate governance guidelines formulated by the Council for Institutional Investors (CII, 1998) encourage firms to establish an NC to improve board efficiency through the appointment of qualified members to the board (Uzun, Szewczyk & Varma, 2004). In addition, the NC Monitoring Committee continually monitors the performance of directors and evaluates the effectiveness of firms' internal corporate governance structure (Adams & Ferreira, 2007).

Consistent with H1, Maury (2006) shows that conflicts between family and minority shareholders are more pronounced in countries characterized by a low degree of investor protection and high degree of concentrated family ownership. The establishment of an NC that is dominated by qualified independent directors may reduce a controlling family's power to increase the number of board members' outside directorships. Although there is growing evidence of the effectiveness of corporate governance regulations in emerging markets such as those in the GCC, the debate over the functions of corporate governance in family-owned and family-controlled public firms has not been extended to the NC context. Given the effects of such regulation on the formation of NCs, the existence of such a committee may reduce family control over the selection of busy board directors. We hypothesized that the positive association between family ownership and control and the appointment of busy directors is suppressed by the existence of an NC. To test this expectation, we propose the following hypothesis:

H2*: The positive association between family ownership and control and the appointment of busy directors is suppressed the existence of a NC.*

2.4 Methodology and Research Design

2.4.1 Data and Sample

Our sample comprises 185 non-financial firms drawn from the Bahrain, Oman, Kuwait, Qatar, KSA and UAE stock markets over the 2005 to 2013 period using S&P Capital IQ. Panel A of Table 1 shows that our initial sample comprises 3286 firm-year observations. We exclude 72 jointly listed firm-years, 1688 firm-years with

missing corporate governance data and 435 firm-year observations with missing key control variables, giving us a final sample of 1091 firm-year observations. Corporate governance variables and family ownership data were hand-collected from the sample firms' annual reports, which are available from the six GCC stock markets and the firms' websites.[16]

Panel B of Table 1 shows that Omani firms account for 45% of our sample, followed by the KSA (40%), the UAE (10%), Bahrain (4%) and Qatar (0.01%). Panel C of Table 1 shows that 20.67% of our sample was derived from the Materials industry sector, followed by firms belonging to the Industrial (19%) and Consumer (15%) industry sectors.

Table 1 Panel A: Busy02 Sample selection

Total Observations	
Number of Non-financial firms available in S & P Capital IQ for the GCC countries	3286
Less	
Joint listed firms observation	-72
Firms with an unavailable annual report for corporate governance data	-1688
Key control variables	-435
Total Observations	**1091**

Table 1 Panel B: Sample Distribution by year and Country (frequency)

YEAR	BAH	KSA	OMN	QAT	UAE	Total
2006	1.00	13.00	55.00	0.00	0.00	69.00
2007	1.00	27.00	59.00	0.00	2.00	89.00
2008	1.00	53.00	63.00	0.00	4.00	121.00
2009	4.00	60.00	63.00	0.00	7.00	134.00
2010	7.00	70.00	65.00	1.00	18.00	161.00
2011	9.00	70.00	63.00	2.00	26.00	170.00
2012	10.00	71.00	64.00	2.00	27.00	174.00
2013	9.00	70.00	64.00	2.00	28.00	173.00
Total	42.00	434.00	496.00	7.00	112.00	1091

Table 1 Panel C: Sample Distribution by Industry (frequency)

INDUSTRY	Freq.	Percent
Consumer Discretionary	170	15.58
Consumer Staples	240	22
Energy	51	4.67
Healthcare	31	2.84
Industrials	209	19.16
Information Technology	8	0.73
Materials	291	26.67

[16] Furthermore, not all firms disclose the number of outside directorships held by board members owing to varying corporate governance code requirements (see Appendix I).

Telecommunication Services	35	3.21
Utilities	56	5.13
Total	1,091	100

2.4.2 Variable Description

Dependent Variable: We employ three variables (*Busy_BSize, Busy$_{(log)}$* and *Busy02*) to proxy for the extent of multiple outside directorships or director busyness. In line with previous studies, *Busy_BSize* refers to the total number of outside directorships held by all board members, scaled by the total number of board members or board size (Fich and Shivdasani 2006; Jiraporn, Kim and Davidson 2008). *Busy$_{(log)}$* is calculated as the natural logarithm of the total number of outside directorships held by all board members. *Busy02* is a dummy variable equal to 1 if the board has at least one member with two or more outside directorships, and 0 otherwise (Ferris, Jagannathan and Pritchard 2003; Fich and Shivdasani 2006; Jiraporn, Kim and Davidson 2008). These proxies are used to reduce any potential endogeneity issues. As a robustness check, we use another two measures (*Busy03 and Busy04*).[17]

Independent Variables: Family ownership and nomination committee data were hand-collected from firms' annual reports, corporate governance reports, stock market filings, Capital IQ filings and the firm's website. There is no corporate governance database currently available for GCC firms. Typically, data pertaining to family ownership and the nomination committee were obtained from the corporate governance and ownership sections of firms' annual reports. Data on ownership were examined to ascertain if it contains information on the founding owners of the firm, or in fact that founding owners are represented by another entity. For instance, some owners are institutions that are in turn owned by founding family members.

Our family ownership variables comprise the percentage of family ownership of a firm's share capital (*FamOwn%*) and the number of directors on the board belonging to one of the top 10 family groups (Claessens et al., 2000) identified in the GCC (*FamilTop10$_{(log)}$*). We score the ultimate family owner or their family

[17] *Busy03* and *Busy04* refer to boards with at least one member that has three or more outside directorships and four or more outside directorships, respectively. All busyness measures for year *t* are taken from the voluntary or mandatory disclosures in the annual reports of firms incorporated in GCC stock markets.

connections of the top-10 family groups as one irrespective of whether the board also comprises family connections of the ultimate owner. TNI reports (TNI, 2008) assisted us in identifying the 10 largest family shareholders among all publicly traded firms in the GCC.[18] Following to (Anderson & Reeb, 2003; Villalonga & Amit, 2006), *FamOwn%* measures the degree of family ownership concentration, which provides an indication of the degree of control family members have in influencing board decision-making. Appendix II provides the names of these 10 family groups.[19]

Our NC committee variables comprise *NC_D* which is scored as 1 if a firm has a nomination committee, otherwise 0; *NC_Ind%* calculated as number of independent directors on the NC scaled by the total number of nomination committee members, and a factor score of five governance attributes of the NC (*NC_Factor*). We follow Al-Hadi, Hasan, and Habib (2015) and Tao and Hutchinson (2013) by applying factor analysis to five governance attributes of the NC committee namely *NC_Ind%*, *NC_Size*, *NC_ChairInd*, *NC_NoMeeting* and *NC_NoQual*. *NC_Size* is the number of directors on the NC scaled by board size, while *NC_ChairInd* is scored as 1 if the NC is chaired by an independent director, otherwise 0. *NC_NoMeeting* is calculated as a natural logarithm of the number of nomination committee meetings and *NC_NoQual* is scored as 1 if the NC has at least one director with accounting or finance qualifications such as a CPA, ACCA, and CFA, otherwise 0.

Control Variables: We employ the following control variables: the number of years since incorporation (*Age*), the natural logarithm of the total number of board members ($Boardsize_{(log)}$), the natural logarithm of total assets (*Size*), sales growth (*Sale_Growth*), operating margin (*OpMargin*), director ownership (*DirOwnership*) and AC characteristics (*AC_Factor*). A firm's *age* is expected to be negatively associated with the number of directorships, as posited by (Fich & Shivdasani, 2006), who find that firms are able to reduce the perceived risk associated with busyness

[18] We find that these families retained their position throughout our sample period. We use the natural log of the number of directors that belong to the top-10 family groups in the GCC based on TNI survey (2008). We also find this family ownership does not significantly change during our sample period.

[19] As a robustness check, we also use two alternative measures of family ownership: *Fam_D* and *FamMem_D*. *Fam_D* is a dummy variable scored as 1 if the family has shares in the firm, and 0 otherwise. *FamMem_D* is computed as a dummy variable that takes a value of 1 if the firm has more than two directors from the same family on the board, and 0 otherwise.

over time. We expect a positive association between board size and the number of outside directorships held by board members. Firm *size* is computed as the natural logarithm of total assets and is expected to be positively associated with board busyness (Ferris, Jagannathan & Pritchard, 2003). Following (Fich & Shivdasani, 2006), we also control for sales growth (*Sale_Growth*) which is measured as sales in year *t* minus sales from the previous year, i.e., *t-1*, scaled by sales in *t-1*. A firm's operating margin (*OpMargin*) is measured as operating income scaled by total assets, which is expected to exhibit no significant association with our directorship proxies. Directors who own more than 5% of a firm's stock (*DirOwnership*) are more likely to consider the risks associated with the directorships held by board members. Following previous studies (Al-Hadi, Hasan and Habib 2015; Faleye, Hoitash & Hoitash, 2011), we also use *AC_Factor* to control for the influence of AC characteristics on board busyness (see Table 2, Panel C).[20]

2.4.3 Model Design

To investigate the association between family ownership and board busyness, we use Tobit[21] (*Busy_BSize*), ordinary least-squares (OLS) ($Busy_{(log)}$) and logistic (*Busy02*) models respectively.[22]

$$Busy\_BSize \,/\, Busy_{(log)} \,/\, Busy02_{i,t} = \alpha_0 + \alpha_1 FamOwn\%_{i,t} + \alpha_2 Age_{i,t} + \alpha_3 Boardsize_{i,t} + \alpha_4 Size_{i,t} + \alpha_5 Sale\_Growth_{i,t} + \alpha_6 OpMargin_{i,t} + \alpha_7 DirOwnership_{i,t} + \alpha_8 AC\_Factor_{i,t} + Year\ Dummies + IND\ Dummies + Country\ Dummies + \varepsilon_{i,t} \quad (1)$$

Our main variable of interest is *FamOwn%* or $FamilTop10_{(log)}$. We expect the coefficient to be positive and significant for both variables. To examine the association between busyness and the interaction between *FamOwn%* and an NC (*NC_D*), we use the following OLS model.

$$Busy\_BSize \,/\, Busy_{(log)} \,/\, Busy02_{i,t} = \alpha_0 + \alpha_1 FamOwn\%_{i,t} + \alpha_2 NC\_D_{i,t} + \alpha_3 FamOwn\% * NC\_D_{i,t} + \alpha_4 Age_{i,t} + \alpha_5 Boardsize_{i,t} + \alpha_6 Size_{i,t} + \alpha_7 Sale\_Growth_{i,t} + \alpha_8 OpMargin_{i,t} + \alpha_9 DirOwnership_{i,t} + \alpha_{10} AC\_Factor_{i,t} + Year + IND\ FE + Country\ FE + \varepsilon_{i,t} \quad (2)$$

[20] We included three AC characteristics (i.e., AC chairman independence, AC size and AC director independence) in the factor analysis of audit committee governance attributes.

[21] We use Tobit analysis in this instance as the dependent variable *Busy_BSize* has a number of variables clustered at a limited value zero (McDonald and Moffitt 1980).

[22] Following (Al-Hadi, Hasan and Habib 2015), we conduct (Breusch and Pagan 1980) Lagrange Multiplier (LM) test to ascertain which model is more appropriate for our main analysis. The LM test shows that we cannot reject the null hypothesis of zero inefficiency. Therefore, we report our analysis using OLS.

Finally, as a robustness check, we also used *NC_D* with *NC_Ind%* and *NC_Factor.*

2.5 Results and Discussion

2.5.1 Descriptive Statistics

The descriptive statistics of the variables included in the regression models for all GCC countries are reported in Table 2 of Panel A. Although most GCC corporate governance codes do not require identification of the number of board members' outside directorships (except for the KSA and Bahrain; see Appendix I), our measure of multiple outside directorships is consistent with that used in prior studies. The mean (median) values of the *Busy_BSize*, *Busy$_{(log)}$* and *Busy02* indices are 31.6, 1.046 and 0.559 with medians of 29.0, 1.0 and 1.0 respectively. These mean values are similar to those reported in previous studies: 33.7 reported by (Ferris, Jagannathan and Pritchard 2003) and 42.0 reported by (Jiraporn, Kim and Davidson 2008). Panel A shows that the mean (median) of *FamOwn%* (percentage of family ownership for firm *i* in year *t*) in the sample period is 0.078 (0.00), which is similar to the mean of 0.06 reported by (Villalonga & Amit, 2006). Overall, our variables are largely consistent with those reported in prior studies (Ferris, Jagannathan & Pritchard, 2003; Fich & Shivdasani, 2006; Field, Lowry & Mkrtchyan, 2013).

Table 2 Panel A: Descriptive statistics

Variable	N	Mean	S.D.	0.25th	Mdn	0.75th
Busy_BSize	1091	0.316	0.264	0.111	0.286	0.455
Busy$_{(log)}$	1091	1.046	0.680	0.693	1.099	1.609
Busy02	1091	0.599	0.490	0.000	1.000	1.000
FamilTop10$_{(log)}$	1091	1.228	1.298	0.000	1.000	2.000
FamOwn%	1091	0.078	0.155	0.000	0.000	0.106
Age$_{(log)}$	1091	22.324	12.424	13.000	19.000	31.000
BoardSize$_{(log)}$	1091	7.740	1.740	7.000	7.000	9.000
Size$_{(log)}$	1091	1430.520	5262.116	41.400	149.500	547.600
Sale_Growth%	1091	39.203	486.093	-13.500	0.180	25.400
OpMargin	1091	0.088	0.101	0.028	0.081	0.145
DirOwnership	1091	0.061	0.116	0.000	0.000	0.100
AC_Factor	1091	0.081	0.976	-0.507	0.352	0.774

Notes: Table 2 Panel A reports summary statistics for the key variables for a sample of 1091from the GCC countries over the period 2005–2013. The data cover the period from 2005 through 2013.

2.5.2 Univariate Analysis

Table 2 of Panel B shows the mean difference and t-statistics of multiple outside directorships with and without family ownership. We find that all measures of multiple outside directorships are significantly higher for firms with family ownership (t-values of 3.56, 3.29 and 4.52 with $p<0.01$ for *Busy_BSize, Busy$_{(log)}$, and Busy02* respectively). This provides support for H1 in that family ownership increases board busyness. Table 2 shows that firms with family ownership are older than their counterparts, have higher levels of director ownership, poorer AC quality and a lower level of assets.

Table 2 Panel B: Univariate Analysis:

Variable	Multiple Outside Directorships means			
	Fmaily_D=0	*Fmaily_D =1*	Difference	t-stat
Busy_BSize	0.2955	0.355	-0.0599	-3.5682***
Busy$_{(log)}$	0.9975	1.1402	-.14272	-3.2922***
Busy02	0.5677	0.7040	-.1362	-4.5249***
Age$_{(log)}$	2.8441	3.1283	-0.2842	-7.6590***
BoardSize$_{(log)}$	2.0249	2.0307	-0.0057	-0.4286
Size$_{(log)}$	5.2069	4.9299	0.2769	2.2659**
Sale_Growth%	0.4046	0.2031	0.2014	0.2291
OpMargin	0.0876	0.0904	-0.0028	-0.4548
DirOwnership	0.0294	0.1352	-0.1058	-14.827***
AC_Factor	0.0835	0.0063	0.0771	1.262***

Notes: Busy_BSize, Busy$_{(log)}$ and Busy02 are proxies for the multiple outside directorships of board members; *Fmaily_D* is dummy variable take value of 1 if family own percentage of shares on firm capital structure; 0 otherwise Age$_{(log)}$ is the firm age measure as the natural log of the number of years since the firm was established; BoardSize$_{(log)}$ is the log of the total number of directors on firm board; Size$_{(log)}$ is the firm size measure as the natural log of total assets; Sale_Growth is the sales growth measure as the Sales revenues in year t minus sales revenues in year t_1 divided by sales revenue in year t-1; OpMargin is operating margin is annual operating income standardized by total assets; DirOwnership is the number of directors who own more than 5% of firm ownership scaled by board size. AC_Factor is an eigenvalue obtained from three audit committee characteristics including size of audit committee, independent of audit committee chairman and number of independent directors on audit committee members. Each regression is reported using robust t-statistics at the firm level, industry lever and country level.
The notation ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

2.5.3 Factor Analysis

Panel C of Table 2 summarizes the results of factor analysis of governance attributes of both the NC and AC. Following (Al-Hadi, Hasan & Habib, 2015), we conduct component factor analysis for both the NC and AC. For the NC, we five governance variables: *NC_Ind%*, *NC_Size*, *NC_ChairInd*, *NC_NoMeeting* and *NC_NoQual*.[23] All factor loadings are greater than 65%. For the AC, we use *AC_ChairInd*, *AC_Size* and *AC_DirInd%.* We obtain loadings of 64% and 67.31% for *NC_Factor* and *AC_Factor* respectively. The goal of factor analysis is to identify commonalities or factors underlying our measures of corporate governance quality. These factors are unobservable but manifest themselves through these observable outcomes (Bushman, Piotroski & Smith, 2004). We follow Bushman, Piotroski, & Smith (2004) and use a criterion of retaining factor with eigenvalues greater than 1, the analysis reveals one factor for each committee. Following Bushman, Piotroski, & Smith (2004), we then rotate the factors using a *varimax rotation* technique to clarify the interpretation of these factors. We present the rotation results in Panel C Table 2.

Using the NC factor 1, qualifications appear relatively unimportant with a weight of 1%. Thus, the factor represents and captures substantial commonalities among the governance attributes of the NC. This clustering is intuitive as a higher number of independent directors in the NC committee are more likely will be headed by an independent committee chair, and both the independent chair and independent directors will regularly meet to monitor and administer board appointments and remuneration. Furthermore, both the number of independent directors and chair are highly correlated with committee size. We have labeled this factor as NC_Factor. We also repeat this process for the governance attributes (number of independent members, existence of an independent chair and size) of the audit committee (AC) giving rise to an audit committee factor AC_Factor. Prior literature (e.g Klein, 2002)

[23] *NC_Ind%* is the percentage of independent directors on the NC, and *NC_Factor* is an eigenvalue obtained from five NC characteristics: NC size, independence of NC chairperson, number of independent directors on the NC, number of NC meetings per year and qualifications of NC members.

measure the AC as a dummy variable or as the number of audit committee independent directors. Following use of *varimax* rotation, we observe that audit committee chair independence and size are important, while number audit committee independence is not.

Table 2 Panel C: Nomination Committee (NC) and Audit Committee (AC) Component Factor Analysis

Factor	Eigenvalue	Difference	Proportion	Cumulative
NC_Ind%	3.2027	2.23068	0.6405	0.6405
NC_Size	0.97202	0.43421	0.1944	0.8349
NC_ChairInd	0.53781	0.34931	0.1076	0.9425
NC_NoMeeting	0.18851	0.08955	0.0377	0.9802
NC_NoQual	0.09896	.	0.0198	1.0000
Rotation: Promax				
Factor	Variance	Proportion		
Factor1	3.2027	0.6405		

Factor	Eigenvalue	Difference	Proportion	Cumulative
AC_ChairInd	2.0193	1.23341	0.6731	0.6731
AC_Size	0.7859	0.5911	0.262	0.9351
AC_DirInd%	0.1948	.	0.0649	1.0000
Rotation: Promax				
Factor	Variance	Proportion		
Factor1	2.0193	0.6731		

2.5.4 Correlation Analysis

Table 3 represents the Pearson correlation matrix between the dependent and independent variables included in this study. Consistent with the univariate analysis results, we find a positive and significant correlation between firms with multiple outside directorships and family ownership. For instance, *FamOwn%* is positively correlated with *Busy02* at $p < 0.1$. Furthermore, firms with a higher proportion of top-10 family directors on their boards ($FamilTop10_{(log)}$) are positively correlated with all of the directorship proxies (*Busy_BSize*, $Busy_{(log)}$ and *Busy02*) at $p < 0.01$.

Table 3: Pearson correlation matrix

	1	2	3	4	5	6	7	8	9	10	11	12
Busy_BSize	1											
Busy(log)	0.9315***	1										
Busy02	0.7704***	0.8518***	1									
FamOwn%	0.0372	0.0122	0.0486	1								
FamilTop10(log)	0.1865***	0.2298***	0.1764***	-0.1231***	1							
Age(log)	0.0125	0.0074	0.018	0.1282***	0.0667**	1						
BoardSize(log)	0.1633***	0.3932***	0.2959***	-0.0683**	0.2409***	0.112***	1					
Size(log)	0.2551***	0.3192***	0.2276***	-0.098***	0.102***	-0.0208	0.3806***	1				
Sale_Growth	0.0135	0.0134	-0.0148	-0.0049	0.0006	0.0032	0.0161	0.0809***	1			
OpMargin	0.0379	0.057*	0.0526*	0.0051	0.0907***	0.1656***	0.0624**	0.1843***	-0.0147	1		
DirOwnership	0.0333	-0.0008	0.0414	0.4877***	-0.1135***	0.0422	-0.0314	-0.0421	-0.0053	0.0637**	1	
AC_Factor	-0.0739**	-0.2024***	-0.1692***	0.0334	0.0317	-0.134***	-0.5394***	-0.3777***	-0.0202	-0.0319	-0.097***	1

Notes: Busy_BSize, Busy(log) and Busy02 are proxies for the multiple outside directorships of board members; FamOwn% is the percentage of the shares own by family on firm capital structure; FamilTop10(log) is natural log of the big 10 family directors over the GCC listed firms (see appendix II); Age(log) is the firm age measure as the natural log of the number of years since the firm was established; BoardSize(log) is the log of the total number of directors on firm board; Size(log) is the firm size measure as the natural log of total assets; Sale_Growth is the sales growth measure as the Sales revenues in year t minus sales revenues in year t_1 divided by sales revenue in year t-1; OpMargin is operating margin is annual operating income standardized by total assets; DirOwnership is the number of directors who own more than 5% of firm ownership scaled by board size. AC_Factor is an eigenvalue obtained from three audit committee characteristics including size of AC, independent of AC chairman and number of independent directors on audit committee members. Each regression is reported using robust t-statistics at the firm level, industry lever and country level.

The notation ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

2.6 Regression Analysis

2.6.1 Family Ownership and Busyness

Table 4 presents the OLS estimates of the association between family ownership (*FamOwn%, and FmilTop10$_{(log)}$*) and the multiple outside directorship proxies (*Busy_BSize*, *Busy$_{(log)}$* and *Busy02*). Consistent with H1, we find the coefficients between these proxies and the family ownership variables to be positive and statistically significant. More specifically, in models 1 to 3, we find that the coefficients (0.112, 0.317 and 1.002) between these variables are significant at $p < 0.05$. We also find the association between family ownership, as represented by the number of top-10 families, and the multiple outside directorship proxies in models 4 to 6 are statistically significant at $p < 0.01$. Our regression results are consistent with the tenets of Type II agency theory, whereby family board members control voting rights through their concentrated ownership (Anderson & Reeb, 2003; Villalonga & Amit, 2006). Consistent with (Ali, Chen & Radhakrishnan, 2007), these findings suggest that family directors control the information flow in firms and participate in activities designed to reward themselves at the expense of minority shareholders. Furthermore, given that GCC regulatory frameworks are in their infancy, family domination, tribalism, customs and traditions affect the strategic decisions of boards.

We also find that multiple outside directorships are significantly associated with some of our control variables, namely board size, firm size and AC quality. These results are consistent with those of prior studies (Ferris, Jagannathan & Pritchard, 2003; Fich & Shivdasani, 2006). We include country, industry and year dummies as controls in all of our regression models, and also corrected standard errors for hetereoscedacity, serial correlation and autocorrelation using White's (1980) and Newey and West's (1987) tests. All variables are winsorized at the 1st and 99th levels.

Table 4: Association between family ownership and busyness

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Busy_BSize	*Busy*$_{(log)}$	Busy02	Busy_BSize	*Busy*$_{(log)}$	Busy02
	Tobit	OLS	Logit	Tobit	OLS	Logit
Intercept	0.2306***	-1.3663***	-7.7959***	0.2303***	-1.1422***	-7.0020***
	(45.97)	(-4.88)	(-6.65)	(45.97)	(-3.99)	(-5.95)
FamOwn%	0.1126**	0.3170**	1.0024**			
	(2.15)	(2.33)	(1.96)			
FamilTop10$_{(log)}$				0.0374***	0.1010***	0.3141**
				(2.64)	(3.01)	(2.28)
Age$_{(log)}$	0.0111	-0.0351	-0.1446	0.0101	-0.0325	-0.1342
	(0.80)	(-1.04)	(-1.05)	(0.73)	(-0.99)	(-1.00)
BoardSize$_{(log)}$	0.1761***	1.2065***	3.5012***	0.1468***	1.1007***	3.2077***
	(4.18)	(11.87)	(7.80)	(3.35)	(10.61)	(7.09)
Size$_{(log)}$	0.0301***	0.0706***	0.2084***	0.0274***	0.0633***	0.1908***
	(5.09)	(5.21)	(3.69)	(4.60)	(4.50)	(3.32)
Sale_Growth	-0.0000	-0.0000	-0.0001	-0.0000	-0.0000	-0.0001
	(-0.26)	(-0.60)	(-1.23)	(-0.23)	(-0.51)	(-1.17)
OpMargin	0.0203	0.1844	0.8864	-0.0018	0.1409	0.6988
	(0.27)	(0.93)	(1.17)	(-0.02)	(0.71)	(0.92)
DirOwnership	0.0697	0.0230	-0.0383	0.1345**	0.2048	0.5962
	(0.98)	(0.12)	(-0.05)	(2.10)	(1.15)	(0.87)
AC_Factor	0.0267***	0.0565**	0.1252	0.0262***	0.0518**	0.1149
	(2.74)	(2.37)	(1.32)	(2.69)	(2.20)	(1.21)
Firm Robust	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
IND Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	1091	1091	1084	1091	1091	1084
pseudo /R-sq	1.146	0.305	0.145	1.1540	0.300	0.1548
	0.231***	-	-	0.230***	-	-
	(45.97)	-	-	(45.97)	-	-

Notes: Dependent variables in Table 4 are Busy_BSize, *Busy*$_{(log)}$ and Busy02 which refer to the proxies for the multiple outside directorships of board members; Two independent variable use to examine the family ownership- control over the GCC listed firms; First, FamOwn% is the percentage of the shares own by family on firm capital structure; Second, FamilTop10$_{(log)}$ is

natural log of the big 10 family directors over the GCC listed firms (see appendix II); $Age_{(log)}$ is the firm age measure as the natural log of the number of years since the firm was established; $BoardSize_{(log)}$ is the log of the total number of directors on firm board; $Size_{(log)}$ is the firm size measure as the natural log of total assets; Sale_Growth is the sales growth measure as the Sales revenues in year t minus sales revenues in year t_1 divided by sales revenue in year t-1; OpMargin is operating margin is annual operating income scaled by total assets; DirOwnership is the number of directors who own more than 5% of firm ownership scaled by board size. AC_Factor is an eigenvalue obtained from three audit committee characteristics including size of AC, independent of AC chairman and number of independent directors on AC members. Each regression is reported using robust t-statistics at the firm level, industry lever and country level.

The notation *, **, and *** denotes statistical significance relation at the 10%, 5%, and 1% levels respectively.

2.6.2 Association between Busyness and Interaction between Ownership and NC

We test for the effect of NC existence on the association between family ownership and multiple outside directorships. Given the regulatory effect of NC formation, an NC can be considered a specialized committee responsible for assessing and appointing board members (Harrison, 1987; Uzun, Szewczyk & Varma, 2004). Hence, we hypothesize that the NC will be an effective monitor, and thus suppress actions that benefit families at the expense of minority shareholders by reducing board members' number of outside directorships.

Table 5 reports the results of the regression of the interactions between NC characteristics and family ownership using different proxies for directorships. Model 1 exhibits our primary specification and estimates our baseline regression, whereas models 2 and 3 examine alternative NC and directorships proxies. In accordance with H2, we find that the coefficient of the interactions between family ownership and the NC variables (*NC_D*, *NC_Ind%* and *NC_Factor*) are negatively associated with the multiple outside directorships proxies (*Busy_Bsize*, $Busy_{(log)}$ and *Busy02*) to a statistically significant degree, which suggests that firms with family representation on the board and an NC in place have fewer busy directors than other firms. For instance, in Model 1 (Table 4), we find that the coefficient of the association between *Busy_BSize* and *FamOwn% Model* is 0.1120**,[1] which is significant at the 0.05% level. Additionally, firms with family ownership *(FamOwn%*) and an NC have reduced family control with a size effect of 0.0187 (0.1998*** *FamOwn%* + -0.1811* *FamOwn%* × *NC_D*) at the 0.1% level.

The coefficients in Model 2 for the interaction term *FamOwn%*(NC_D*, *NC_Ind%* and *NC_Factor*) on multiple outside directorship proxy $Busy_{(log)}$ are negative and statistically significant (-0.5733, -0.3992 and -0.2505) at $p < 0.05$. Moreover, Model 3 presents the coefficients for the interaction term *FamOwn%*(NC_D*, *NC_Ind% and* NC_Factor) on multiple outside directorship proxy *Busy02*, and the results are consistent with models 1 and 2 (-1.4884, -1.4852 and -1.0081). Overall, these results are consistent with H2 and provide evidence in

[1] *, ** and *** indicate significance at the 10%, 5% and 1% levels.

support of our argument that an NC has a negative effect on the relationship between family ownership concentration and the outside directorships of board members. The presence of an NC thus suppresses the positive association between family ownership and board busyness. These results show that establishing board committees such as NCs, as recommended by GCC regulators, improves board efficiency of firms with concentrated family ownership.

Table 5 Panel A: Association between busyness and interaction between (Ownership and Nom. Committee)

	Busy_BSize			$Busy_{(log)}$			Busy02		
	Model 1-3			Model 4-6			Model 7-9		
	Tobit			OLS			Logit		
Intercept	0 2296***	0 2285***	0 2306***	-1 4129***	-1 4164***	-1 4371***	-7 8547***	-7 8654***	-7 3783***
	(41 09)	(41 37)	(38 28)	(-5 17)	(-5 23)	(-4 76)	(-6 76)	(-6 77)	(-5 98)
FamOwn%	**0.1979*** **	**0.1781** **	**0.1176** *	**0.5924*** **	**0.5347*** **	**0.3201** **	**1.6516** **	**1.8040** **	**1.1932** **
	(2.62)	**(2.40)**	**(1.91)**	**(2.98)**	**(2.74)**	**(2.02)**	**(2.30)**	**(2.55)**	**(2.06)**
NC_D	**0.0720*** **			**0.2209*** **			**0.8435*** **		
	(3.04)			**(3.85)**			**(3.37)**		
FamOwn% * NC_D	**-0.1777** *			**-0.5733** **			**-1.4884**		
	(-1.83)			**(-2.26)**			**(-1.52)**		
NC_Ind%		**0.0933*** **			**0.2206*** **			**0.6421*** **	
		(4.53)			**(4.71)**			**(3.16)**	
FamOwn% * NomInd%		**-0.1270**			**-0.3992** **			**-1.4852** **	
		(-1.61)			**(-2.15)**			**(-1.97)**	
NC_Factor			**0.0458*** **			**0.1058*** **			**0.3198*** **
			(3.45)			**(3.49)**			**(2.58)**
FamOwn% * NC_Factor			**-0.0713**			**-0.2505** **			**-1.0081** **
			(-1.51)			**(-2.10)**			**(-2.23)**
$Age_{(log)}$	0 0108	0 0092	0 0004	-0 0356	-0 0376	-0 0550	-0 1409	-0 1373	-0 2203
	(0 80)	(0 69)	(0 02)	(-1 05)	(-1 11)	(-1 47)	(-1 00)	(-0 98)	(-1 41)
$BoardSize_{(log)}$	0 1622***	0 1511***	0 2083***	1 1621***	1 1478***	1 2630***	3 4124***	3 4403***	3 5622***
	(3 72)	(3 48)	(4 47)	(11 45)	(11 35)	(11 36)	(7 53)	(7 58)	(7 51)
$Size_{(log)}$	0 0296***	0 0295***	0 0241***	0 0690***	0 0685***	0 0547***	0 2048***	0 2009***	0 1552***
	(5 47)	(5 51)	(4 16)	(5 09)	(5 09)	(3 76)	(3 56)	(3 53)	(2 59)
Sale_Growth	-0 0000	-0 0000	-0 0000	-0 0000	-0 0000	-0 0000	-0 0000	-0 0000	-0 0000
	(-0 16)	(-0 12)	(-0 72)	(-0 25)	(-0 28)	(-1 09)	(-1 01)	(-1 06)	(-1 06)
OpMargin	0 0326	0 0435	0 1226	0 2284	0 2483	0 3692*	0 9788	1 1312	1 8201**
	(0 41)	(0 55)	(1 46)	(1 15)	(1 25)	(1 74)	(1 26)	(1 46)	(2 24)
DirOwnership	0 0586	0 0625	0 0464	-0 0171	-0 0144	0 0135	-0 1407	-0 1762	-0 3249
	(0 73)	(0 75)	(0 50)	(-0 09)	(-0 07)	(0 06)	(-0 20)	(-0 25)	(-0 41)
AC_Factor	0 0233**	0 0170*	0 0261**	0 0441*	0 0320	0 0559**	0 0892	0 0692	0 1403
	(2 29)	(1 66)	(2 33)	(1 84)	(1 32)	(2 10)	(0 93)	(0 71)	(1 38)
Firm Robust	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
IND Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1091	1091	959	1091	1091	959	1084	1084	957
pseudo R-sq	1 179	1 216	1 179	0 314	0 316	0 275	0 162	0 161	0 148
sigma	0 2296***	0 2285***	0 2306***	-	-	-	-	-	-
	(41 09)	(41 37)	(43 11)	-	-	-	-	-	-

Notes: Dependent variables in Table 4 are Busy_BSize, $Busy_{(log)}$ and Busy02 which refer to the proxies for the multiple outside directorships of board members; NC_D is a dummy variable that takes a value of 1 if the firm has a dedicated nomination committee and 0 otherwise; FamOwn% is the percentage of the shares own by family on firm capital structure; FamOwn% * NC_D is the interaction between percentage of family ownership multiplied by nomination committee dummy; NC_Ind% is the percentage of independent directors on nomination committee; FamOwn% * NomInd% is the interaction between percentage of family ownership multiplied by percentage of independent directors on NC; NC_Factor is an eigenvalue obtained from five NC characteristics which includes size of NC, independent of NC chairman, number of independent directors on NC members, number of NC meetings per year and qualification of NC members;

FamOwn%*NC_Factor is the interaction between percentage of family ownership multiplied by NC factor eigenvalue; $Age_{(log)}$ is the firm age measure as the natural log of the number of years since the firm was established; $BoardSize_{(log)}$ is the log of the total number of directors on firm board; $Size_{(log)}$ is the firm size measure as the natural log of total assets; Sale_Growth is the sales growth measure as the Sales revenues in year t minus sales revenues in year t_1 divided by sales revenue in year t-1; OpMargin is operating margin is annual operating income standardized by total assets; DirOwnership is the number of directors who own more than 5% of firm ownership scaled by board size. AC_Factor is an eigenvalue obtained from three audit committee characteristics including size of AC, independent of AC chairman and number of independent directors on audit committee members. Each regression is reported using robust t-statistics at the firm level, industry lever and country level.

The notation *, **, and *** denotes statistical significance relation at the 10%, 5%, and 1% levels respectively.

2.6.3 Robustness Analysis

We conduct several robustness checks of our results. First, to address the concern that our results are not specific to the measurement of multiple outside directorships, and motivated by the literature (Ferris, Jagannathan & Pritchard, 2003; Fich & Shivdasani, 2006; Jiraporn, Kim & Davidson, 2008), we include two alternative proxies for multiple outside directorship measures (*Busy03* and *Busy04*). Panel A of Table 6 provides evidence consistent with family ownership increasing the number of multiple outside directorships. For example, models 1 to 8 results show a positive relationship between *FamOwn%* and several proxies of directorships (*NoDir2_BS, NoDir2_LN, NoDir2, NoDir3_BS, NoDir3_LN, NoDir3, Busy03, and Busy04*) at $p<0.01$ or better.[1] We also test the association between ($FamilTop10_{(log)}$) the second measure for family ownership and all outside directorships (*NoDir2_BS, NoDir2_LN, NoDir2, NoDir3_BS, NoDir3_LN, NoDir3, Busy03, and Busy04*) at ($p<0.01$ and better). These results provide consistent evidence that family ownership reduces board monitoring via the engagement of busy directors on the board. These results support our H1.

[1] No.Dir2_BS is calculated as the number of directors in a firm that features two or more outside directorships scaled it by board size, NoDir3_LN natural logarithm of No.Dir2 and NoDir2 raw variable of the number of directors in a firm that features two or more outside directorships. We also repeated this for a firm that if the number of directors in a firm that features three or more outside directorships (No.Dir3_BS, NoDir3_LN, and NoDir3); Busy03 is dummy equal to 1 if a firm has more than 3 directorships, otherwise 0 and Busy04 is a dummy equal to 1 if a firm has more than 4 directorships, otherwise 0.

Table 6: Robust analysis Panel A: Association between alternative measures of family ownership and busyness

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	NoDir2_BS	***NoDir2_LN***	***NoDir2***	***NoDir3_BS***	***NoDir3_LN***	***NoDir3***	***Busy03***	**Busy04**
	Tobit	***OLS***	***OLS***	***Tobit***	***OLS***	***OLS***	**Logit**	**Logit**
Intercept	-0.0580	-0.6396***	-1.7393***	-0.1740***	-0.7437***	-2.6310***	-10.9888***	-3.9717***
	(-0.96)	(-3.37)	(-3.31)	(-3.34)	(-4.60)	(-5.93)	(-8.18)	(-2.64)
FamOwn%	**0.0576****	**0.1711****	**0.4994****	**0.0800*****	**0.1231***	**0.6026*****	**1.0922****	**0.9895**
	(2.04)	**(1.99)**	**(2.01)**	**(3.15)**	**(1.68)**	**(3.05)**	**(2.08)**	**(1.62)**
$Age_{(log)}$	-0.0068	-0.0196	-0.0524	0.0025	0.0253	0.0243	0.1439	-0.2124
	(-0.90)	(-0.86)	(-0.88)	(0.42)	(1.30)	(0.49)	(0.96)	(-0.98)
$BoardSize_{(log)}$	0.0559**	0.4840***	1.4062***	0.0663***	0.3797***	1.3558***	4.1385***	1.1833*
	(2.45)	(6.99)	(7.75)	(3.18)	(6.44)	(8.47)	(8.16)	(1.96)
$Size_{(log)}$	0.0100***	0.0222**	0.0700***	0.0129***	0.0289***	0.0943***	0.3216***	0.2277***
	(3.11)	(2.28)	(2.92)	(4.56)	(3.48)	(4.41)	(4.79)	(2.71)
Sale_Growth	0.0000	0.0000	0.0000	-0.0000	0.0000	-0.0000	0.0021	0.0061
	(0.11)	(0.55)	(0.22)	(-1.17)	(0.08)	(-1.18)	(0.55)	(1.00)
OpMargin	0.0190	0.1280	0.2500	0.0315	0.0327	0.2342	0.7104	1.4587
	(0.46)	(1.02)	(0.80)	(0.99)	(0.31)	(0.94)	(0.90)	(1.38)
DirOwnership	0.0079	0.0578	-0.0132	-0.0205	-0.0007	-0.2802	0.7286	0.64
	(0.21)	(0.50)	(-0.04)	(-0.62)	(-0.01)	(-1.11)	(0.96)	(0.76)
AC_Factor	0.0134**	0.0549***	0.0955**	0.0080*	0.0103	0.0614*	0.2900***	0.1822
	(2.54)	(3.42)	(2.40)	(1.69)	(0.76)	(1.66)	(2.88)	(1.32)
Firm Robust	YES	YES	YES	YES	YES	YES	Yes	Yes
Year Dummies	YES	YES	YES	YES	YES	YES	Yes	Yes
IND Dummies	YES	YES	YES	YES	YES	YES	Yes	Yes
Country Dum.	YES	YES	YES	YES	YES	YES	Yes	Yes
N	1091	1091	1091	1091	1091	1091	1083	1076
R-sq (Pseudo R2)	-0.0426	0.084	0.105	-0.088	.32362	0.1777	0.236	0.083
sigma	0.1250***	-	-	0.1107***	-	-	-	
	(46.71)			(34.91)	-	-	-	

Table 6 Panel A Cont.

	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14	Model 15	Model 16
	NoDir2_BS	***NoDir2_LN***	***NoDir2***	***NoDir3_BS***	***NoDir3_LN***	***NoDir3***	**Busy03**	**Busy04**
	Tobit	***OLS***	***OLS***	***Tobit***	***OLS***	***OLS***	**Logit**	**Logit**
Intercept	-0.0874	-0.5488***	-2.1291***	-0.0293	-0.6005***	-1.5499***	-9.0514***	-1.6058
	(-1.59)	(-3.31)	(-4.78)	(-0.46)	(-3.05)	(-2.90)	(-6.65)	(-1.07)
$FamilTop10_{(log)}$	**0.0357*** **	**0.0956*** **	**0.2667*** **	**0.0134***	**0.0297**	**0.1202** **	**0.6272*** **	**0.8119*** **
	(5.20)	**(4.86)**	**(5.20)**	**(1.74)**	**(1.27)**	**(2.05)**	**(3.97)**	**(3.66)**
$Age_{(log)}$	0.0005	0.0163	0.0097	-0.0064	-0.0170	-0.0497	0.0554	-0.3486
	(0.09)	(0.84)	(0.20)	(-0.85)	(-0.74)	(-0.85)	(0.37)	(-1.54)
$BoardSize_{(log)}$	0.0376*	0.3003***	1.1414***	0.0459*	0.4630***	1.3159***	3.6218***	0.4901
	(1.71)	(4.94)	(6.99)	(1.93)	(6.41)	(7.02)	(7.03)	(0.81)
$Size_{(log)}$	0.0105***	0.0226***	0.0760***	0.0089***	0.0198**	0.0610**	0.2515***	0.1627**
	(3.68)	(2.72)	(3.50)	(2.76)	(2.01)	(2.52)	(3.93)	(2.18)
Sale_Growth	-0.0000	0.0000	-0.0000	0.0000	0.0000	0.0000	0.0019	0.0051
	(-0.92)	(0.14)	(-0.94)	(0.13)	(0.57)	(0.25)	(0.51)	(0.99)
OpMargin	0.0126	-0.0122	0.0925	0.0101	0.1056	0.1717	0.6102	1.199
	(0.39)	(-0.12)	(0.37)	(0.25)	(0.84)	(0.55)	(0.75)	(1.14)
DirOwnership	0.0254	0.0705	0.0656	0.0408	0.1554	0.2720	1.1997	1.191
	(0.82)	(0.79)	(0.29)	(1.17)	(1.47)	(1.01)	(1.57)	(1.39)
AC_Factor	0.0071	0.0062	0.0541	0.0135**	0.0558***	0.0960**	0.2577**	0.1516
	(1.47)	(0.46)	(1.47)	(2.55)	(3.47)	(2.43)	(2.54)	(1.07)
Firm Robust	YES	YES	YES	YES	YES	YES	Yes	Yes
Year Dummies	YES	YES	YES	YES	YES	YES	Yes	Yes
IND Dummies	YES	YES	YES	YES	YES	YES	Yes	Yes
Country Dum.	YES	YES	YES	YES	YES	YES	Yes	Yes
N	1091	1091	1091	1091	1091	1091	1083	1076
R-sq (Pseudo R2)	-0.099	0.1088	0.1902	-0.0418	0.082	0.104	0.245	0.1
sigma	0.1098***	-	-	0.1251***	-	-	-	-
	(35.85)	-	-	(46.71)	-	-	-	-

Notes: No.Dir2_BS is calculated as the number of directors in a firm that features two or more outside directorships scaled it by board size, NoDir3_LN natural logarithm of No.Dir2 and NoDir2 raw variable of the number of directors in a firm that features two or more outside directorships. We also repeated this for a firm that if the number of directors in a firm that features three or

more outside directorships (No.Dir3_BS, NoDir3_LN, and NoDir3); Busy03 is dummy equal to 1 if a firm has more than 3 directorships, otherwise 0 and Busy04 is a dummy equal to 1 if a firm has more than 4 directorships, otherwise 0; FamOwn% is the percentage of the shares own by family on firm capital structure; $FamilTop10_{(log)}$ is natural log of the big 10 family directors over the GCC listed firms (see appendix II); $Age_{(log)}$ is the firm age measure as the natural log of the number of years since the firm was established; $BoardSize_{(log)}$ is the log of the total number of directors on firm board; $Size_{(log)}$ is the firm size measure as the natural log of total assets; Sale_Growth is the sales growth measure as the Sales revenues in year t minus sales revenues in year t_1 divided by sales revenue in year t-1; OpMargin is operating margin is annual operating income standardized by total assets; DirOwnership is the number of directors who own more than 5% of firm ownership scaled by board size. AC_Factor is an eigenvalue obtained from three audit committee characteristics including size of AC, independent of audit committee chairman and number of independent directors on AC members. Each regression is reported using robust t-statistics at the firm level, industry lever and country level.

The notation ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Second, we also add two additional measures of family ownership (see Table 6, Panel B). Following (e.g Jaggi & Leung, 2007; Ali, Chen & Radhakrishnan, 2007; Jaggi, Leung & Gul, 2009), we include a dummy variable (*FamMem_D*) equal to 1 if the firm has at least one family member on the board, and otherwise 0, and another (*Fam_D*) equal to 1 if the firm is controlled (or has shares held) by family shareholders, and 0 otherwise. In both models, the magnitudes and signs of the coefficients do not change compared to our baseline analysis in Table 4. For example, the coefficients of models 1 to 3 for the association between *Fam_D* and the three measures of busyness (*Busy_BSize*, $Busy_{(log)}$ and *Busy02*) are significant at $p < 0.01$. In addition, in models 4 to 6, the associations between family (*FamMem_D*) and the multiple outside directorship proxies (*Busy_BSize*, $Busy_{(log)}$ and *Busy02*) are also positive and significant at $p < 0.01$ (Model 4) and $p <0 .05$ (models 5 and 6).

Table 6 Panel B: Association between alternative measure of family ownership and busyness:

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Busy_BSize	**Busy$_{(log)}$**	**Busy02**	**Busy_BSize**	**Busy$_{(log)}$**	**Busy02**
	Tobit	OLS	Logit	Tobit	OLS	Logit
Intercept	-0.1412	-1.2321***	-7.2676***	-0.1698	-1.3699***	4.8967***
	(-1.22)	(-4.36)	(-6.17)	(-1.47)	(-4.89)	(2.89)
Fam_D	**0.0693*** **	**0.1748*** **	**0.7103*** **			
	(3.82)	**(4.03)**	**(4.37)**			
FamMem_D				0.0441***	**0.0847** **	**0.2788** **
				(2.81)	**(2.20)**	**(1.97)**
Age$_{(log)}$	0.0049	-0.0493	-0.2154	0.0083	-0.0234	-0.0486
	(0.37)	(-1.49)	(-1.58)	(0.63)	(-0.70)	(-0.38)
BoardSize$_{(log)}$	0.1595***	1.1657***	3.3650***	0.1604***	1.1828***	3.4165***
	(3.62)	(11.39)	(7.48)	(3.58)	(11.16)	(7.79)
Size$_{(log)}$	0.0297***	0.0697***	0.2044***	0.0304***	0.0724***	0.2189***
	(5.59)	(5.20)	(3.65)	(5.55)	(5.22)	(4.06)
Sale_Growth	-0.0000	-0.0004	-0.0054	-0.0000	-0.0000	-0.0000
	(-0.38)	(-0.57)	(-1.23)	(-0.34)	(-0.43)	(-1.15)
OpMargin	0.0299	0.2071	0.9989	0.0196	0.2958	1.0206
	(0.37)	(1.04)	(1.30)	(0.25)	(1.50)	(1.42)
DirOwnership	0.0316	-0.0537	-0.5090	0.0951	0.3128*	1.3247**
	(0.41)	(-0.28)	(-0.72)	(1.32)	(1.75)	(2.08)
AC_Factor	0.0251**	0.0528**	0.1011	0.0277***	0.0601***	0.1490*
	(2.51)	(2.25)	(1.05)	(2.76)	(2.58)	(1.65)
Firm Robust	Yes	Yes	Yes	Yes	Yes	Yes
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
IND Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Country Dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	1091	1091	1084	1091	1142	1173
adj. R-sq	1.187	0.313	0.163	1.158	0.289	0.1591
sigma						
	0.2293***			0.2303***		

	(41.38)		(42.00)

Notes: Busy_BSize, $Busy_{(log)}$ and Busy02 are proxies for the multiple outside directorships of board members; Fam_D is a dummy variable that takes a value of 1 if the family own a percentage of shares on firm capital structure and 0 otherwise; FamMem_D a dummy variable that takes a value of 1 if at least two director on the board represents same family ownership and 0 otherwise; $Age_{(log)}$ is the firm age measure as the natural log of the number of years since the firm was established; $BoardSize_{(log)}$ is the log of the total number of directors on firm board; $Size_{(log)}$ is the firm size measure as the natural log of total assets; Sale_Growth is the sales growth measure as the Sales revenues in year t minus sales revenues in year t_1 divided by sales revenue in year t-1; OpMargin is operating margin is annual operating income standardized by total assets; DirOwnership is the number of directors who own more than 5% of firm ownership scaled by board size. AC_Factor is an eigenvalue obtained from three AC characteristics including size of AC, independent of AC chairman and number of independent directors on audit committee members. Each regression is reported using robust t-statistics at the firm level, industry lever and country level.

The notation ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

Another possible way for families to maintain control is to employ less experienced directors. We follow prior literature (e.g., (Badolato, Donelson & Ege, 2014; Custódio & Metzger, 2014) to collect data on board experience. Eight variables pertaining to board experiences were hand collected from annual reports and categorized into two sets: a) monitoring experience comprising chairman and CEO experience (measured as the number of directors who was a chairman or a CEO prior to joining the current board); b) financial experience calculated as sum of directors that use to have a finance role (CFO, Treasurer, controller, head of accounting department, financial analyst, and banking) prior to joining the current board. In addition, we also sum total board experiences in firm *i* in year *t*.

Following our main analysis presented in Table 4, we scaled monitoring experience and financial experience on board size. We also calculated the natural log of this variable. Results are tabulated in Table 7. We find consistent results with our hypothesis that families in the GCC are reluctant to promote or introduce high profile directors in the board. Specifically, we find a negative and statistically significant association between board experience and family ownership. We also find family ownership reduces the directors with the monitoring experiences in the board. This suggests that families in the GCC practices several ways to transfer the monitoring power to their hands, this not only is effected through employment of more directors with outside directorships, but also via reducing the appointment of experienced directors in the board.

Table 7: Experience (e.g., Total board experience, Mentoring Experience and Financial Experience) and Family Ownership

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
	Exp_BS	***Exp_LN***	***Exp***	***MonExp_BS***	***MonExp_LN***	***MonExp***	***FinExpe_BS***	***FinExp_LN***	***FinExp***
	Tobit	OLS	OLS	Tobit	OLS	OLS	Tobit	OLS	OLS
Intercept	0.2686	-0.6480***	-8.6851***	0.3372*	-0.3940	-4.1783***	-0.0565	-1.4570***	-2.4347***
	(1.32)	(-3.08)	(-9.53)	(1.81)	(-1.57)	(-5.14)	(-0.38)	(-5.98)	(-4.27)
FamOwn%	**-0.4274*** **	**-0.8188*** **	**-2.8870*** **	**-0.3885*** **	**-1.0420*** **	**-2.8373*** **	**0.0078**	**0.1111**	**-0.0009**
	(-9.55)	**(-9.02)**	**(-6.80)**	**(-9.54)**	**(-8.98)**	**(-7.61)**	**(0.24)**	**(1.05)**	**(-0.00)**
$Age_{(log)}$	0.0186	0.0855***	-0.0056	0.0066	-0.0526	0.0035	-0.0014	0.0104	0.0566
	(1.52)	(3.34)	(-0.05)	(0.60)	(-1.58)	(0.03)	(-0.15)	(0.35)	(0.82)
$BoardSize_{(log)}$	-0.0402	0.8923***	5.0396***	-0.0409	0.7463***	3.0338***	0.0465*	0.7829***	2.0906***
	(-1.08)	(11.80)	(13.40)	(-1.21)	(7.96)	(9.26)	(1.74)	(8.42)	(10.19)
$Size_{(log)}$	0.0168***	0.0281***	0.1708***	0.0172***	0.0546***	0.1496***	0.0007	0.0144	0.0255
	(3.21)	(2.65)	(4.08)	(3.60)	(4.17)	(3.96)	(0.18)	(1.14)	(0.89)
Sale_Growth	-0.0000	-0.0000	-0.0000	-0.0000	-0.0000	-0.0000	0.0000	-0.0000	0.0000
	(-0.30)	(-0.28)	(-0.40)	(-0.45)	(-0.36)	(-0.68)	(0.07)	(-0.00)	(0.11)
OpMargin	0.1436**	0.1012	0.5061	0.0026	-0.0692	-0.4642	0.1637***	0.4703***	1.1021***
	(2.12)	(0.74)	(0.93)	(0.04)	(-0.40)	(-0.84)	(3.36)	(2.99)	(2.97)
DirOwnership	-0.0771	-0.2428*	-0.9276**	-0.2113***	-0.2701*	-1.8951***	0.0544	-0.0275	0.0852
	(-1.29)	(-1.91)	(-2.02)	(-3.90)	(-1.65)	(-4.23)	(1.26)	(-0.18)	(0.25)
AC_Factor	0.0130	0.0125	0.1189	0.0012	-0.0023	0.0739	0.0086	0.0127	0.0142
	(1.49)	(0.71)	(1.63)	(0.15)	(-0.11)	(1.09)	(1.37)	(0.62)	(0.30)
Firm Robust	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year Dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES
IND Dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES
Country Dummies	YES	YES	YES	YES	YES	YES	YES	YES	YES
N	897	879	897	897	833	897	897	818	879
R_squre	-	0.397	0.488		0.426	0.417		0.178	0.195
sigma	0.1781***	-	-	0.1626***	-	-	0.1291***	-	-
	(40.34)	-	-	(42.36)	-	-	(42.36)	-	-

Exp_BS: Number of board experience that calculated as sum of Mentoring experience (Chairman and CEO) experiences and Financial Experiences (CFO, Treasurer, controller, head of accounting department, financial analyst, and banking experience) scaled by the board size, ***Exp_LN***: Natural Log. of total board experiences variable; ***Exp:*** *Continuous variable of total experiences;* ***MonExp_BS***: Monitoring experience which consists of: Chairman and CEO experiences (Number of directors with or was chairman or was a CEO prior to join current board); scaled by board size; ***MonExp_LN****; Natural log. of monitoring board experiences;* ***MonExp****:* ***Centurions*** *board monitoring experiences;* ***FinExpe_BS***: Financial experience that calculated as sum of directors that used to be in one of financial position prior to join the current board. Financial positions are CFO, treasurer, controller, head of accounting department, financial analyst, and banking experience) scaled by board size; ***FinExpe_LN:*** *Natural log. of the board financial experiences;* ***FinExpe***: Continuous variable of the board financial experience.

The notation ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

2.6.4 Endogeneity Test: Two-Stage Least Squares

The results of the OLS estimations suggest a positive and significant association between the family ownership measures (*FamOwn%* and *FamilTop10$_{(log)}$*) and the proxies of multiple outside directorships (*Busy_BSize*, *Busy$_{(log)}$*, *Busy02)*. However, the sign, magnitude and/or statistical significance of these estimates may be biased owing to endogeneity issues. For example, family ownership and the error term in the first regression (Table 4) may be correlated. To address this potential problem, we use instrumental variable (IV) estimations (two-stage least squares) to re-test the OLS panel regression findings reported in Table 4. However, this approach is appropriate only if the IVs are correlated with the endogenous repressor (here, the family ownership measurements) but uncorrelated with the error term in the second-stage regression. Following the literature using this IV approach (e.g., Larcker & Rusticus, 2010) and related empirical studies (Hasan, Hossain & Habib, 2015; Al-Hadi, Hasan & Habib, 2015), we specified two firm-specific characteristics: a) a *CSR Disclosure* dummy variable that takes a value of 1 if the firm discloses corporate social responsibility (CSR) activities, and 0 otherwise, and b) *FamOwn_CI*, measured as family ownership based on country and industry, as IVs. Several studies find CSR disclosures to be correlated with family ownership (Dyer & Whetten, 2006) because of reputational concerns and a desire to protect family assets. We thus expect a positive association between CSR and family ownership. No study to date has shown an association between CSR and director busyness. The use of *FamOwn_CI* can be also justified by the premise that the industry level of family ownership in each year has a profound effect on the firm ownership level. For example, in GCC firms, family ownership is highly concentrated in the Materials industry sector (Arouri, Hossain & Muttakin, 2014).

Table 8 shows a positive association between our IVs and family ownership. The coefficients of both *CSR Disclosure* and *FamOwn_CI* are positive at the 1% level of significance in models 1 and 2. In the second stage, the association between family ownership and busyness in both measures is positive and significant. For models 1 and 2, we find coefficients of 0.6510 and 1.2606 at $p < 0.01$ and $p < 0.05$,

respectively. Hence, even after controlling for endogeneity (2SLS), our results remain unchanged.[1]

Table 8: Sensitivity analysis endogeneity test:

	Model 1 **Busy_BSize $_t$**		**Model 2** **Busy$_{(og)t}$**	
	1st Stage	2nd Stage	1st Stage	2nd Stage
Intercept	-.1758***	-0.1331	-.1758***	-1.5396***
	(-2.87)	(-1.20)	(-4.47)	(-5.59)
Busy_BSize $_t$		**0.6510*** **		
		(2.87)		
Busy$_{(log)t}$				**1.2606** **
				(2.35)
All variables in Main Specification	Yes	Yes	Yes	Yes
Year & Industry & Country Dummies	Yes	Yes	Yes	Yes
Firm Robust	Yes	Yes	Yes	Yes
Observations	1090	1090	1090	1090
Instrumental Variables	Coff.	t-stat	Coff.	t-stat
CSR_Disclosed	0.0303	(3.32)	0.0303	(3.32)
FamOwn_CI	0.7489	(5.97)	0.7489	(5.97)
Post-estimations Test for Instrumental Variables:				
1-Predictive power partial R2				
Robust F-test		0.0574		0.0574
P-value		0.000		0.000
2- Underidentification test				
Kleibergen -paap rk LM statistic		37.817		37.817
P-value		0.000		0.000
3- Weak identification test				
Kleibergen-Paap Wald rk F statistic		21.843		21.843
10% maximal IV size		19.93		19.93
4- Overidentification test				
Hansen J statistic		0.84		2.316
Chi-sq(3) P-value		0.3595		0.1281
5- Endogeneity test				
Durbin-Wu-Hausman tests	6.554		3.513	
Chi-sq(1) P-value	0.0105		0.0609	

Notes: CSR_Disclosed is dummy variable take value of 1 if firm has disclosed about corporate social responsibility activities, 0 otherwise; FamOwn_CI is mean family ownership in country i in each industry.

The notation ***, **, and * denotes statistical significance at the 1%, 5%, and 10% levels, respectively.

[1] We also conduct several post-estimation tests to further support our theoretical link using 2SLS. Weak instrument test results suggest that excluded instruments are correlated with the endogenous regressors, as the Cragg-Donald Wald F-statistic is greater (21.84) than the (Stock and Yogo 2005) critical value (19.93) in models 1 and 2. The results of the Hansen test of over-identifying restrictions do not reject the null hypothesis ($p > .10$), suggesting that the instruments are uncorrelated with the error term but are correctly excluded from the second-stage regression, indicating the validity of the instruments used for 2SLS. In neither model can we reject the null hypothesis, with J-statistics of 0.84 (Model 1) and 2.316 (Model 2). Finally, the (Hausman 1978) test results strongly ($p < .01$) reject the heterogeneity of family ownership, implying that the 2SLS estimates are preferable to the OLS estimates.

2.7 Conclusion

This study examines the association between family ownership and multiple outside directorships in the GCC, which provides us with an ideal environment for the study because the region's public firms have high levels of concentrated family ownership. In addition, it is common for firms to have multiple directorships, and compliance with corporate governance codes is not mandatory in much of the GCC, although many firms recently began establishing NCs voluntarily. In this scenario, both wealth and control can be expected to transfer from minority to family shareholders. Specifically, we expect that concentrated family ownership will lead to an increase in the number of directors who hold multiple outside directorships to disseminate control among board constituents.

Using data from six GCC countries, we find that the number of directors holding multiple outside directorships is significantly higher for firms with higher levels of family ownership. We also find that the formation of a separate NC to suppress the positive association between family ownership and the appointment of busy directors. Our results also reveal that NC characteristics (e.g., size, independent directors and *NC_Factor*) are significantly associated with a reduction in the number of busy directors on corporate boards. These results are robust to the use of various proxies of busyness and family ownership measures, and hold after controlling for endogeneity concerns.

This study contributes to the growing literature on corporate governance in the GCC region. However, prior studies do not consider the influence of family ownership, and neither do they investigate the role of the NC as a corporate governance mechanism.[2] We contribute to the family ownership literature by showing that families maintain their control over minority shareholders through the appointment of busy directors to their boards. Our findings strongly support the recommendation that NCs be formed to protect minority shareholders by reducing the number of outside directorships. Their formation may also promote the effectiveness of the monitoring, advising and control duties of board members. This

[2] Prior research on the effect of family ownership concentration on multiple directorships has primarily been carried out in Western, predominantly Anglo-American, contexts. However, firms elsewhere, particularly in the GCC, operate with distinctive cultures and in distinct legal and institutional environments, which may have important effects on corporate governance. Hence, the applicability of Western models should be tested in different contextual environments.

study relied on Type II agency and institution-based theories to examine our main question concerning the association between family ownership and multiple outside directorships held by board members.

Our empirical findings show that in firms with highly concentrated family ownership, family owners exert a significant influence over the appointment of busy directors. These findings may be useful to investors, assisting them in making informed decisions regarding investing in firms with concentrated family ownership.

The study does, however, have some limitations that suggest a number of avenues for future research. First, the study focuses primarily on the effect of family ownership as a firm capital structure on director busyness. Many other types of ownership could also be considered, such as institutional, state or foreign ownership. Second, we encourage future researchers to consider such issues as whether the extent of managerial ownership influences the appointment of busy directors, in turn affecting monitoring quality in the firm. Our results may also have important implications for other emerging economies whose policymakers and regulators are likely to address the conflict between controlling and non-controlling shareholders than those in the GCC.

In summary, we find that families in GCC firms maintain control over minority shareholders by appointing busy or less experienced directors to their boards. In addition, we find that the existence and quality of specialized board committees such as NCs improve board effectiveness. A key implication of these findings is that regulators should formulate laws that impose a strict limit on the number of multiple directorships that the board members of publicly listed companies can hold if they are to protect minority shareholders. In addition, regulators should require firms to disclose in their corporate governance reports such information as firm type (e.g., family or non-family), the kind of relationship ties (i.e., family or non-family) among owners, managers and directors, and affiliate and family relationships. The findings of this study also suggest that regulators should ensure greater transparency and a high level of disclosure to address agency problems if all shareholders are to influence firms' decision-making process. These changes in corporate governance codes are essential if the GCC is to enhance its competitiveness and truly become a true regional financial and business hub.

Appendix I

The GCC Corporate Governance Codes and Nomination & Remuneration Committee provisions. Source: the GCC Corporate Governance Codes.

Description	KSA	OMN	UAE	QTR	BAH	KUW
Year of issuance of corporate governance codes	2006	2002	2007	2009	2011	2013
Status of compliance with corporate governance codes	Mandatory	Mandatory	Mandatory	Comply/ Explain	Comply/ Explain	Mandatory from 2016
Nomination committee statues	Nomination and Remuneration committee	-	-	Nomination	Nomination	Nomination
Corporate governance codes provide separate section for Nomination committee provisions	Yes	-	-	Yes	Yes	Yes
Provision for an independent directors on the nomination committee	-	-	-	Majority	Majority	Majority
Size of nomination committee	-	-	-	-	≥ 3	≥ 3
The provisions of the nominations committee has identified the number of external directorships for each member	≤ 5	-	-	-	≤ 3	-
N.C should regularly review the necessary time commitment from each member of boards	Yes	-	-	Yes	Yes	-
Each member of board of directors should inform the N.C about the number of outside directorships or before taking any board appointments in another form.	-	-	-	-	Yes	-
Nomination criteria should recommend by nomination committee for all candidates either by board or shareholders election	Yes	-	-	Yes	Yes	Yes
The relation (experience) with the other board memberships should evaluate by N.C	-	-	-	-	Yes	Yes

Appendix II

GCC Big 10 families stock market 2008.

Oman	UAE	Bahrain	Kuwait	Qatar	KSA
Al-Shanfari	El-Nahyan	Al-Mashani	El-Kharafi	El-Thani	Al-Rajhi
Al-Rawas	El-Maktoum	El-Khalifa	El-Sabah	Al-Mana	El-Issa
Al-Sultan	Al-Qassimi	Al-Mazrouq	Al-Bahar	Al-Attiya	El-Mady
Al-Lawati	Al-Nuaimi	Al-Meer	Al-Rashed	Al-Saad	El-Saud
Al-Mashani	Al-Mualla	Al-Faivre	Al-Behbahani	Al-Ali	Al-Abanumay
El-Busaidi	Al-Dhaheri	Al-Harthy	Al-Fulaij	Al-Naimi	Al-Faris
Al-Harthy	Al-Mazrouei	Al-Khalili	Al-Ghanim	Al-Mannai	Al-Hakami
Al-Saleh	Al-Qubaisi	Al-Murshidi	Al-Marafi	Al-Mohannadi	Al-Husseini
Al-Zawawi	Al-Suwaidi	Al-Razak	Al-Sultan	Al-Ansari	Al-Omran
Al-Hassan	Al-Otaiba	Al-Yahyai	Al-Nafisi	Al-Sulaiti	Al-Rashid

Source: TNI (2008)

Chapter 3

Joint-audit, political connections and cost of debt capital

3.1 Introduction

We investigate the effects of joint audit on firm-level cost of debt in Gulf Cooperation Council (GCC) countries. Joint audit is an audit practice whereby two independent audit firms audit the financial statements with a shared audit effort, but a single report signed by both audit firms (Lesage *et al*. 2012). Unlike single audit which is the norm in most of the countries around the world, some countries require, while others permit, financial statements being audited by more than one audit firm. Despite the common understanding that joint audit should improve audit quality because of shared audit efforts, empirical evidence has so far provided inconclusive evidence (Ratzinger-Sakel *et al*. 2015). We attempt to extend this stream of research by examining the effects of joint audit on the cost of debt in the GCC region.

Whether the provision of joint audit improves or deteriorates audit outcome has been debated. The conventional wisdom suggests that two heads are better than one, yet we see the prevalence of single audit around the world. Deng *et al*. (2012) demonstrate analytically that if two audit firms involved in joint audit have comparable technological efficiency, then the audit quality under a joint audit regime is equivalent to single audit quality. However, adding a firm with lower technological efficiency to form a joint audit will reduce the overall audit quality. Prior research on joint audit generally finds that (i) earnings management is lower in large audit firms than in firms audited by non-Big 4 auditors (Francis *et al.,* 2009) but Bedard *et al*. (2012) find evidence of less earnings management in joint audits involving two big audit firms than in firms using one big and one small audit firm; (ii) lower reporting quality in joint audits involving two big audit firms than in firms using one big and one small audit firm (Marmousez, 2008); (iii) no discernible effects on financial reporting quality between joint and single audits (Lesage *et al.,*

2012); and finally (iv) variation in audit fees (Audousset-Coulier, 2015; Zerni *et al*., 2012; Holm & Thinggaard, 2016).

Although the role of external auditing has been investigated in GCC countries (Al-Shammari *et al*., 2008; Al-Hadi *et al*., 2015), there is a paucity of research on the effectiveness of joint audit in GCC countries. While joint audit is a requirement in many jurisdictions such as France, Finland, and Hong Kong, joint audit is voluntary for non-financial firms in the GCC, except for Kuwait where joint audit is mandatory.[1] This unique setting allows us to explore the use of joint audit in a number of politically and economically important developing countries which have similar characteristics in terms of business environment, but significant cultural differences, compared with many Western countries.

Unlike prior studies that investigate the effects of joint audit on financial reporting quality and audit fees (e.g., Francis *et al*., 2009; Marmousez, 2008; Audousset-Coulier, 2015; Zerni *et al*., 2012), we choose cost of debt, an outcome of direct economic consequence for organizations.[2] We argue that the provision of joint audit enhances the reliability of financial statements, reduces information asymmetry and, consequently, the cost of capital, including the cost of debt. If creditors perceive financial statements of firms being audited by joint auditors as being superior to single audits, then we should expect a reduction in the cost of debt. However, the composition of audit-pair will play a dominant role in the relationship. The cost of debt might vary depending on whether the joint audit has been performed by both big 4 audit firms, or one big and one small audit firm.

Using 1,378 firm year-observations from seven GCC stock markets, we document a 3.37 basis point decrease in the cost of debt for firms employing joint auditors. We further find that this effect is more pronounced when at least one of the joint auditors is a Big 4 audit firm. Our results are robust to potential endogeneity concerns emanating from the auditor self-selection problem. We then extend our analysis to examine the moderating role of royal family ownership, a form of political connection, on the association between joint audit and the cost of debt. Prior literature suggests that firms with political connections are perceived as higher risk

[1] Three countries in the GCC region (UAE, KSA and Kuwait) mandate join-audit for the financial firms (Al-Shammari *et al*. 2008).

[2] Karjalainen (2011) examines the link between auditor choice [certified vs. uncertified, Big 4 vs. non Big 4, audits with one responsible auditor vs. audits with multiple responsible auditors], and the cost of debt financing for private SMEs in Finland. They find that privately held firms with Big 4 audits and those with multiple auditors have a lower cost of debt capital than other firms.

by creditors, who charge higher interest on their loans than they charge for non-connected firms (Bliss & Gul, 2012). Houston *et al*. (2014), on the other hand, find the opposite. However, none of these studies examines the impact of joint audit in moderating the association between politically-connected firms and the cost of debt. We find that the cost of debt is significantly lower for firms with royal family connections, but only when they are joint audited. A plausible explanation for this finding relates to the fact that royal ownership may be conducive to expropriation, which increases firm risk and hence the cost of capital. A joint audit might be more effective in constraining such opportunistic behaviour through a more extensive audit practice made possible through shared audit efforts.

Our paper is in spirit of Zerni et al. (2012), Karjalainen (2011) and Marmousez (2008). However our paper different in several way. First Zerni *et al.* (2012) investigate the impact of voluntarily joint audit on audit quality during 2001-2007 in Swedish setting and their sample includes private firms. They find that joint audit improve conservatism, and lower abnormal accruals, better credit ratings and lower risk forecasts of becoming insolvent next year. However, this result is driven from the country high regulation quality and governance practices. For instance, the minority shareholders in Sweden are highly protected by law that stipulates the minority shareholders are able to allocate or choose second auditor (Zerni et al., 2012). While in our paper, we investigate the impact of joint audit on the cost of debt in GCC, where all GCC countries have very less regulation quality and governance. Minority shareholders usually are not protected. Second our paper considers the public firms before, during and after the Global Financial Crisis (GFC). Zerni *et al.* (2012), evidence and sample alleviated the impact of GFC. It is suggested that during the GFC, all audit firms faced high pressure to reduce the audit fee, which eventually lead to reduce the audit efforts (e.g. Heyjung, Ahn and Cho 2016).

This paper provides consistent evidence that joint audit provides better audit quality before, during and after the GFC, hence creditors still rely on joint audit. Second our paper different than (Marmousez 2008). She investigates the determinates and consequences of joint audit in France. She finds that presence of two joint audit (two big four) is associated with lower quality results. In other term, two auditor lets each to rely on other thus reduces the maximum effort. Her results is evidenced from France where joint audit is mandatory, and regulation and investor protection are considered high. While our paper provides evidence from voluntary

regime of joint audit, and provide inconsistent results with (Marmousez 2008), that we find joint audit improves the audit quality, thus reduces the cost of debt.

Finally, Our paper very close to Karjalainen (2011). Karjalainen (2011) provides evidence that joint audit reduces the cost of debt in Finland. First Karjalinen (2011) documents this evidence from private firms, where the only source of finance is available is through the banks. Secondly, the unique feature of finish audit environment that beside the certified auditors, group of un-certified or unprofessional auditors operate in Finland (Karjalainen 2011). Further, in Finland firms are voluntary can employ one then one auditor who present the same or different audit firm (Karjalinene 2011, p.90). While, in the GCC, is considered bank-oriented system, but public firms' still easier to raise capital through the capital market, compared to the private firms. The GCC countries have unique financing arrangements that are characterized by high leverage where the main source of debt is bank financing (Al-Yahyaee, 2006; Chowdhury and Maung, 2013). In fact, loans from commercial banks are a major source of financing for GCC companies. Agency theory advanced by Jensen and Meckling (1976) implies that agents may employ joint auditors to reduce information asymmetry and, thus, agency costs. Companies with high leverage can be expected to appoint joint auditors to reduce agency costs by reassuring debtholders that their interests are protected. Hence, it is possible that GCC companies use joint audit to reduce agency costs and information asymmetry and, consequently, the cost of debt. In addition, in the GCC all auditors should be professionally certified, and auditors should present different audit firms.

3.2 An overview of the GCC setting for joint audit and debt financing

The GCC countries collectively constitute a rapidly growing group of developing countries that derive a considerable amount of their income from oil exports, hold 45% of the world oil reserves and have rapidly expanding equity markets (Al-Hadi *et al*., 2015; Al-Shammari *et al*., 2008). Economic development in the GCC has been accompanied by an increase in the number of listed firms, which

grew from 473 in 2005 to 705 in 2013.[3] The GCC countries have strong economic and social ties and share a similar Islamic culture (Al-Shammari *et al*., 2008). Recently, the countries have witnessed strong economic growth with an increase in Gross Domestic Product (GDP) from US$817 billion in 2006 to US$1,635 billion in 2014.[4] Similarly, the stock markets have experienced rapid growth where market capitalization increased from US$120 billion in 2002 to US$1,179 billion in 2014.[5]

The GCC stock markets have recently attracted international investors in line with significant changes in the member states' economic and financial environment. The liberalisation of GCC capital markets has taken place through several reforms in regulation and governance. The liberalization of capital markets along with pressure from multinational corporations has led the governments to adopt IASs in the hope that adoption would give assurances of comparable risk reporting and auditing to domestic and international investors (Azzam, 1998). The GCC governments are responsible for formulating and adopting accounting and auditing regulations, and for managing and running enforcement agencies to ensure adherence to these regulations (Shuaib, 1999).

3.2.1 Audit Regulations

The auditing profession in the GCC is organised and governed by commercial codes. Except for Saudi Arabia, all GCC countries still regulate the auditing profession through the codes of commercial laws (Al-Qahtani, 2005). For example, the setting of auditing regulations in Saudi Arabia rests on the Ministry of Trade, which has the power to set accounting and auditing standards besides licensing requirements. Article 14 of the Banking Control Law (BCL 1966) and Article 10 of the Cooperative Insurance Companies Control Law (CICCL 2003) require all firms listed in the banking and insurance sectors to appoint two independent auditors, who are jointly responsible for the audit opinion. On the other hand, Article 130 of the Saudi Companies' Law (CL 1965) indicates that other firms in different industries could voluntarily appoint two independent auditors. In Qatar, the Qatar Central Bank

[3]See Gulfbase website [Link: http://www.gulfbase.com/]

[4] See GCC-STAT website [link: https://gccstat.org/ar/elibrary/publications/gccstat]

[5] See GCC-STAT website [link: https://gccstat.org/ar/elibrary/publications/gccstat]

issued a Circular No. 33 of 1996 that requires the appointment of two auditors for banks operating in Qatar for a maximum period of five years, and the work is to be carried out in accordance with IASs.[6]

For joint audit in non-financial firms, Kuwait is the only country in the GCC where listed companies must be audited by two auditing firms. The Commercial Companies Law requires that companies listed in the KSE be audited by at least two independent auditors. The two auditors became mandatory for first time in 1995, when the Ministry of Commerce and Industry issued Law No. 51/1994, amending some of the rules of Commercial Companies Law No. 15/1960 where a new paragraph is added to Article 161 of the said Law, effective from the beginning of 1995, which states that companies listed on the KSE must designate at least two independent auditors who have no dependent link with each other.

Form a corporate governance perspective, the audit committee plays an important role in improving the quality of financial reporting and risk management by overseeing the financial reporting process (Bédard & Gendron, 2010). In the GCC countries, Qatar is the only country that requires terms of reference of the audit committee to be publicly disclosed: a practice that is consistent with the international best practice. Establishment of an audit committee is mandatory in all the GCC countries although many differences exist regarding the composition of the audit committees. Except for Bahrain, all other GCC countries require the audit committees to be equipped with at least one financial experts while the Bahrain corporate governance code requires that majority of the members should have financial expertise. The corporate governance codes in Bahrain, Oman and Qatar mandate at least four meetings during a year while such a requirement is not explicitly stated in other countries.

[6] With respect to general auditing regulation in other GCC countries, the following is noted. In Oman, the first law that regulates the auditing profession was passed in 1976 by the issuance of the Royal Decree No. 77 and then amended by the Royal Decree No. 20 in 1988. The requirements of these two decrees are similar to those in Qatar. In the UAE, the auditing profession was organized according to the Federal Law No. 22 which was issued in 1995. Similar to other GCC countries, this Commercial Law dictates the licensing and the duties and responsibilities of auditors. In Bahrain, Law No. 26 is similar to other GCC countries' laws in all material aspects. The first law that regulated the auditing profession in Kuwait was issued in 1962, No. 6, and amended by Law No. 3 of 1965. Under the Companies Law and Kuwait Stock Exchange (KSE), audits are conducted by registered accountants though there is no defined set of generally accepted auditing standards.

3.2.2 Debt Financing in the GCC Countries

The GCC countries have unique financing arrangements that are characterised by high leverage, where the main source of debt is bank financing (Al-Yahyaee, 2006; Chowdhury & Maung, 2013). In fact, loans from commercial banks are a major source of financing for GCC companies. Banks's interest rate in the GCC markets is higher than the U.S. and the European market(Al-Amri *et al*. 2015). The average annual interest rate for the GCC countries from 1999 to 2011 is 9% whereas it was 6.1% in the U.S. for the same period. Before the Gloable Financial Crisis (GFC), banks in all the GCC countries enjoyed a steady growth pattern. In particular, between 2006-2008, assets were increasing at a strong double-dgit rate in all the GCC countries, e.g., at a rate of 21% in Kuwait and and 46% in Qatar. However, after the crisis, growth across the GCC countries slowed down, e.g., about 3% in bahairn to 20% in Qatar. The passage of some prudent regulations after the crisis to ensure the regions' stability and a resilient banksing sector, is considred as one of the main reasons for the slow down of the bank growth. The stringent regulations increased non-performing loans(NPLs) in corporate and retail banking, forcing many banks in the region to tighten their lending policies. For instance, the central bank of the United Arab Emirates (UAE) introduced a cap on govement lending (ATKearney 2013). The Dubai authories purchased Dh 4bn (US$1.1bn) of securities from Emirates NBD in June 2009 to help boost its Tier 1 capital – the UAE Central Bank has been the source of most of the financial assistance. In October 2008, the Qatar Investment Authority announced plans to take a 10%–20% stake in the country's main banks – effectively a capital injection worth around US$5bn – while the government also purchased the stock portfolios of banks in March 2009.[7]

Commercial banks provide working capital loans, loans for equipment financing, and trade finance. GCC companies are able to obtain a line of credit at the rate of interest charged by the bank. The terms under which banks provide companies with loans are very similar to those in the US and other parts of the world. Reputation is the leading term, and the five C's (Character, Capacity, Collateral, Capital, and Credit) are applicable in GCC as they are anywhere in the developed

[7]https://www.atkearney.com/documents/10192/4000436/The+New+Reality+of+GCC+Banking.pdf/b1d598ca-2b1b-447f-acd4-cdde91d37cc5

countries. Although banks do not rely on market information when granting a loan, they require detailed studies of an applicant before making any loan.

Despite impressive economic development, the GCC countries have not yet developed a sophisticated bond market (Samaha & Azzam, 2015). Though primary bond issuance has increased over recent years, the bond markets of the GCC countries still lack important ingredients of a functioning debt capital market, such as bond rating, transparency, market making and institutional market participants. The limited bond market leaves room for banks to play an important role in financing GCC companies. Banks provide mainly short-term loans which explains the high reliance of GCC firms on this form of financing. The fact that GCC companies depend on banks to finance their activities adds further importance to the study. The literature has often described banks as being particularly good at investigating informationally-opaque firms, and deciding who the viable borrowers are. Banks have an advantage at collecting information, but are potentially more expensive sources of capital than public debt markets. The costs of monitoring, and imperfect financial contracting, should raise the costs of debt for firms borrowing from banks and, hence, lower their debt ratios (Faulkender & Petersen, 2006). The fact that GCC firms are highly levered seems surprising, given the high costs of obtaining debt. The use of joint audit in the GCC countries could be a vehicle by which to reduce the cost of debt.

3.2.3 Political Connections

Ruling families and family directors are largely dominant in the GCC region (Al-Shammari *et al*., 2008). In particular, 60% of equity markets are dominated by firms with royal family members on the board of directors (TNI Survey, 2008). Appointment of ruling family members on the board in the GCC arises through their seniority amongst a monarchical group, as a founding member of the firms, through their large equity and controlling interest in the firm and through appointment by a nomination committee (Hawkamah, 2010; Hertog, 2012). Some firms are established through presidential decree or other special statutes that give them particular benefits including appointment of politically connected directors such as ruling family members.

It is "Socially" accepted that the "Sheik"[8] directors in the GCC expect absolute obedience and are not willing to be questioned (Sidani & Al Ariss, 2013). Guedhami *et al*. (2014) suggests that firms with political connections have incentives to improve their transparency. In particular, politicians choose quality auditors to monitor financial reporting. Any discretion in financial reporting by managers will then be restricted, so politically connected firms choose a quality auditor to protect their reputation. However, Chaney *et al*. (2011) contradict this argument, as they find that political connectedness reduces corporate transparency. In the GCC countries, rulers actively incorporate royal family members into state institutions, manipulating newly reinforced family ties to penetrate and control the top origination positions, and centralizing decision-making (Hertog, 2012). This leads royal family members to become more cohesive and powerful compared to other elements of society. This argument is confirmed by Chaney *et al.* (2011) who show that the presence of strong politicians in the firm will in a sense make the management feel more relaxed when providing transparent information as politicians provide protection from regulators and authorities.

Politically connected directors or major family shareholders enjoy substantial control because of their concentrated equity holding in firms, with their voting rights exceeding their cash flow rights.[9] Ruling family members are able to exert significant power on the board owing to their ownership interests as major shareholders as well as via their political connections. Thus, ruling family directors are likely to have the power to obtain private benefits at the expense of minority shareholders. Ruling family directors may promote their interest at the expense of minority shareholders and, in doing so, collect more private benefits from their substantive control (Barclay & Holderness, 1989; Andres & Vallelado, 2008). Benefits can be expropriated from other shareholders via a range of Type II agency mechanisms, including by partitioning minority shareholders to make them ineffective (Gilson & Gordon, 2003), by engaging in related-party transactions (Anderson & Reeb, 2003), through

[8] Sheik is a term used to entitle the front (leader or governor) of a tribe who inherits the title after his father.

[9] Expropriation theory suggests that a controlling director is entrenched due to his or her significant voting rights and frequent involvement in management and, hence, tends to abuse the power in extracting corporate resources for management's own interests (Shleifer & Vishny, 1997).

managerial entrenchment (Shleifer & Vishny, 1997) and via government risk-seeking (Xu *et al*. 2013).

The relationships among government members, old trading families and royal families overlap and are interdependent (Kshetri & Ajami, 2008). These relationships can be strengthened by shared mutual interests between merchant and ruling families. Therefore, a large proportion of directors are affiliated with the largest shareholders or with government agencies. The governments of the GCC countries wield significant influence on firms' investment. Governments are also heavily and significantly involved in controlling firms (Baydoun *et al*., 2013). With respect to CEO ownership, such ownership CEO ownership in the GCC countries is more likely obtained from share incentive-based dividend schemes. However, in high family and government ownership concentration, CEO have a sufficient incentive for rent-seeking and self-interest maximisation.

3.3 Literature review and hypotheses development

The link between information quality and cost of capital is one of the most fundamental tenets in Finance and Accounting. Because of information asymmetries arising from dispersion of ownership, adverse selection costs arise between buyers and sellers of firm shares (Jensen & Meckling, 1976). This should result in reduced levels of liquidity for firm shares. To overcome the reluctance of potential investors to hold firm shares in illiquid markets, firms must issue capital at a discount. Discounting results in fewer proceeds to the firm and, hence, higher costs of capital (Amihud & Mendelson, 1986; Diamond & Verrecchia, 1991). To reduce such a high cost of capital, managers could engage high quality auditors, among other mechanisms (Li *et al*., 2010; Almutairi *et al*., 2009). Appointing a single audit firm has been the norm globally despite the conventional wisdom that 'two heads are better than one'.

Prior research on the effects of audit quality on the cost of capital has exclusively used a single audit regime. Li *et al*. (2010) document a lower cost of both equity and debt capital for firms that use both national and city level industry specialists. Almutairi *et al*. (2009) test the information asymmetry proposition

directly and document that firms audited by short-tenured, yet industry specialist auditors have a lower bid-ask spread (a proxy for information asymmetry). Causholli and Knechel (2012) find that high audit quality lowers a company's cost of debt at the IPO. We add to this stream of literature by examining a joint audit regime in the GCC, which also differs with respect to the debt financing environment.

Joint audit can be defined "as an audit in which financial statements are audited by two independent auditors with shared audit effort, one single auditor's report signed by both auditors and joint liability for both auditors" (Ratzinger-Sakel *et al*., 2015, p. 9). Under joint audit the audit planning and audit work are coordinated and the audit procedures are allocated between the two auditors. It involves cross reviews and joint quality controls, but the issuance of a single audit opinion. There is divergence of opinion with respect to the value of joint audit. Proponents argue that joint audits, as a corporate governance mechanism can enhance auditor independence in the event of a disagreement with clients. This is accomplished since under the joint audit regime the audit fees and more profitable non-audit fees emanating from consulting services are shared by two audit firms, hence reducing fee dependence: a threat to impairment of auditor independence. Furthermore the participation of at least two audit firms lessens the risk that "…both Big 4 firms (or one Big 4 firm and one non-Big 4 firm) would simultaneously acquiesce to client pressure and not report the discovered breach(s) [since such an act] would require three-party collusion [thereby increasing the chance that] the expected penalties of being caught for substandard reporting are more likely to exceed its expected benefits for at least one of the auditors in a joint audit setting…" (Zerni *et al*., 2012, p. 733-34).

Opponents of mandating joint audits, on the other hand, argue that joint audits might allow one audit firm to 'free ride' on the work of the other audit firm, hence negatively affecting the incentives of the latter. Joint audit increases the cost of auditing but does not deliver commensurate benefits (Zerni *et al*., 2012). Furthermore, insufficient information exchange may result from a lack of cooperation between two competing audit firms. Although the sharing of audit fees and non-audit fees between two audit firms may lessen the competition, economic rationality may prevail and hinders cooperation between the audit parties. From an audit production perspective, it is possible that efficiency of manuals and procedures are lost when an audit is shared. Additionally, "some of the non-productive

overheads of planning, supervision and review would be doubled" (Thinggaard & Kiertzner, 2008, p.144).Taken together, opponents argue that the costs associated with the provision of joint audit does not deliver commensurate benefits.

The European Commission (EC) issued the Green Paper 'Audit Policy: Lessons from the Crisis' (2010) mandating joint audit. This proposal was motivated by the understanding that the Big 4 audit firms dominate the European listed market, with the noticeable exception of France, which imposes mandatory joint audits (Huber, 2011). The EC joint audit proposal met with divergence of opinion regarding the costs of conducting joint audits and the potential benefits to be derived with respect to audit quality and encouraging audit market competition. After an open consultation process, the Green Paper culminated in a regulatory proposal, which was issued in November 2011. In September 2012, the Committee on Legal Affairs (JURI) of the European Parliament published a draft report on this regulatory proposal (European Parliament, 2012) (Ratzinger-Sakel *et al*., 2015).

Prior research on joint audit has examined financial reporting and audit fees implications of joint audit using the European setting, where joint audit has been common. Using data from France, Francis *et al*. (2009) find lower abnormal accruals for companies with Big and Small (BS) audit regimes than for those using no Big 4 auditors. Lobo *et al*. (2016) find that the combination of BS generates higher impairment-related disclosure levels than other combinations, likely because Big 4 firms bear the reputation cost fully under joint audits using the BS setting. Marmousez (2008) reports a less timely recognition of economic losses for firms being audited by both Big 4 (BB) audit firms than for the combination of BS audit firms in France. This is contrary to the conventional wisdom that Big 4 audit firm provides better quality audits. However, given that two audit firms are more likely to incur comparable reputation risk in the effects of sub-standard auditing, they are more likely to rely on each other and, consequently, would exert less than the maximum effort. On the other hand, Lesage *et al*. (2012) do not find any evidence relating joint audits to audit quality. These findings highlight the importance of considering the pairing of auditors when comparing audit quality under these two regimes.

With respect to the audit fee implications of joint audit, the audit fee in Regime BS is lower than that in Regime B if, and only if, the big firm and small firm have similar technological efficiency and/or the big firm bears a sufficiently large

proportion of misstatement cost (Deng *et al*., 2012). Francis *et al*. (2009) find that French audit fees are not higher under joint audits compared to other European countries that do not require joint audits. Thinggaard and Kiertzner (2008) examine audit fees for companies listed on the Copenhagen Stock Exchange in 2002, and find that joint audits reduce audit fees compared with audits where one auditor is dominant, albeit only for larger companies. In contrast, Zerni *et al*. (2012) show that in the Swedish voluntary joint audit environment, audit fees are substantially higher than for single audits. They argue that the fee premium may be considered an indication of the client firm's willingness to pay more for a higher audit quality.

Similarly, Gonthier-Besacier and Schatt (2007) find that, when two Big 4 firms audit company accounts, the fees charged are significantly lower in comparison with those paid in joint audits where one or two small firms participate. The opposite result is documented in a different setting by Holm and Thinggaard (2016). They use the data for the whole population of nonfinancial Danish companies listed on the Copenhagen Stock Exchange in the five-year period surrounding the abolition of joint audits in 2005. They find discounts (of around 25%) in audit fees for companies under single audits. They did not separately consider joint audits performed by two big audit firms and those performed by one big and one small firm. Audousset-Coulier (2015) shows that joint audits by two big auditors do not require a fee premium compared to joint audits by one big firm and one small firm.

Creditors are concerned about audit quality for several reasons. First, reliable and transparent financial information emanating from higher audit quality (Balsam *et al*., 2003; Reichelt & Wang, 2010) helps creditors better predict borrowers' future cash flows, reduces information risk by mitigating the uncertainty about future cash flows and, hence, cost of debt. In addition, the credibility associated with a reputable auditor reduces the monitoring costs of creditors (DeAngelo, 1981). Agency theory advanced by Jensen and Meckling (1976) implies that agents may employ joint auditors to reduce information asymmetry and, thus, agency costs. Companies with high leverage can be expected to appoint joint auditors to reduce agency costs by reassuring debtholders that their interests are protected. Joint audit plays an important role as a mechanism of corporate governance since it validates and verifies financial statements (Watts & Zimmerman, 1986), and enhances the credibility of financial statements (Fortin & Pittman, 2007) by improving the precision in firms' earnings (Pittman & Fortin, 2004). In fact, the joint auditing process enables the

monitoring of managerial opportunistic behaviour and limits incentives for earnings management. Broye and Weill (2008) suggest that monitoring tends to increase with the importance of agency conflicts between insiders and debtholders. Following the argument that joint audit enhances audit effectiveness by accumulating audit experience from two auditors, we expect a greater degree of monitoring by independent auditors, a reduction in information asymmetry and, hence, a lower cost of debt financing. Therefore, we develop the following hypothesis:

H_1: *Joint audit reduces the cost of debt in the GCC countries*

Our second hypothesis is built on the political connections, audit quality, and cost of financing framework. Political connections can benefit firms in several ways, such as: preferential treatment to access credit in state-owned banks (Dinc, 2005), more government contracts (Agrawal & Knoeber, 2001), corporate assistance during crises (Polsiri & Jiraporn, 2012), lower tax burdens (Adhikari *et al.,* 2006); greater allocation of government investment during financial crises (Duchin & Sosyura, 2012), and lower cost of equity (Bubakari *et al*. 2008; Al-Hadi *et al*. 2015).

However, another perspective holds that political connections can also lead to value-destroying tunnelling by dominant insiders eager to at least recover the costs incurred in developing these ties (e.g., Randall *et al*., 2000). For instance, Bliss and Gul (2012) find that politically connected firms in Malaysia incur higher costs of debt compared to their non-connected counterparts. However, Houston *et al*. (2014) find the opposite. They explore two possible channels through which a negative association between political connections and cost of debt could manifest: a 'Borrower Channel' in which lenders charge lower rates because they recognize that connections enhance the borrower's credit worthiness, and a 'Bank Channel' in which banks assign greater value to connected loans to enhance their own relationships with key politicians.

From an external auditing perspective, prior literature finds that audit firms charge higher audit fees for the politically connected firms compared to non-connected firms, as auditors assessed a higher risk for connected firms and, as such, devoted greater audit efforts in auditing them (Gul, 2006). While reputation

incentives and litigation shape audit quality in developed markets such as the US[10] (Baber *et al*., 1995, Mansi *et al*., 2004), this becomes less of a concern for audit firms in other countries, for example, in emerging markets where it is harder for investors to recover damages in the event of audit failures (Guedhami *et al*., 2014). Guedhami *et al*. (2014) find that politicians are likely to choose quality auditors for their firms to protect their reputations. On other hand, prior studies find that the politically connected firms may be reluctant to appoint Big 4 audit firms to improve financial reporting transparency, since connected-firms already have access to cheap loans from state-owned banks (Dinc¸ 2005, Claessens *et al*., 2008).

Given the conflicting views on the nature of auditing for connected firms, it remains unclear whether GCC firms having political connections with Royal families will undertake joint audit practices to lower information asymmetry or to improve the legitimacy of the GCC firms, hence reducing the cost of debt. The power of ruling family members over the GCC's economic and political regimes may undermine recent efforts by the region's regulators to enforce and improve financial reporting transparency and compliance (Al-Yahyaee *et al*., 2011).

Thus, two combing views can be illustrated. First, to the extent that board membership of ruling family members protects their personal interests and the interests of related companies, the management of firms characterized by ruling family memberships may not be forthcoming with adequate risk disclosures (Al-Hadi *et al*., 2016). Hence, creditors may consider these firms as more risky and charge higher interest costs. Such connected firms may therefore appoint joint auditors to reduce negative market perceptions and, hence, financing costs. This suggests that, the cost of debt will be lower for politically-connected firms employing joint auditors.

Second view, the connected firms that extract private benefits may choose a single auditor/ lower quality auditors to hide their expropriation activities (Chaney et al. 2015). That because the rent-seeking behaviour and interests of politically connected firms of the royal family usually are protected by the monarchy (Mazaheri, 2013), and grant more opportunities to divert corporate resources, since they tend to be subject to fewer disciplinary constraints from regulators. In addition,

[10] Weber *et al*. (2008) -German firms- and Skinner and Srinivasan (2012) -Japanese firms- support the reputation explanation for audit quality in countries that impose minimal discipline on auditors in the form of holding them liable for violating securities laws.

non-royal entrepreneurs "gain a major advantage in the market if they are able to get a royal patron on board with a project. Thus, royal private sector elites are not the only ones who have directly benefited and built up their business activities over time: a layer of non-royal entrepreneurs are also capitalizing on this branding of the 'royal private sector' through personal, familial, and business relationships." (Mazaheri 2013, p. 315). This perspective suggests a higher cost of debt for connected firms without joint audit practices.

H_2: *The negative association between joint audits and cost of debt is more pronounced for firms having political connections with Royal families than non-connected firms*.

3.4 Research design

3.4.1 Data and Sample

Panel A of Table 9 shows that our initial sample comprises 3,286 non-financial firm-year observations from the Bahrain, Oman, Kuwait, Qatar, Kingdom of Saudi Arabia (KSA) and United Arab Emirates (UAE) stock markets over the 2005 to 2013 period. We exclude 72 cross listed firm-years.[11] Our final sample consists of 1,378 firm-year observations after deleting 1,688 firm-year observations with missing corporate governance data and 148 firm-year observations with missing key control variables. Corporate governance variables and ownership data were hand-collected from the sample firms' annual reports, which are available from the six GCC stock markets and the firms' websites.[12] We used S&P Capital IQ to collect all financial statements items.

[11] We excluded these firms due to heterogonous characteristics of cross-listed firms. For instance, many firms are cross-listed on the London Stock Exchange (LSE) and New York Stock Exchange (NYSE): countries that are characterised by strong investor protection and enforcement regimes.

[12]Furthermore, not all firms disclose the number of outside directorships held by board members owing to varying corporate governance code requirements (see Appendix III).

Panel B of Table 9 shows the sample distribution based on the country. The KSA has the highest number of firm-year observations (32.66%) followed by Oman (25%). Bahrain has the least number of firm-year observations in our sample (2%).

Panel C of Table 9 shows that 28% of our sample was derived from the Materials industry sector, followed by firms belonging to the Industrial (25%), Consumer Staples (17%), Consumer Discretionary (12%), Energy (4%), Telecommunications (3%) and the remaining firms are distributed to other industry sectors. Panel D, Table 9 also shows the distributions of joint audit firms among the GCC countries. KSA has about 248 joint audit firms, followed by Kuwait at 34[13], and UAE at 9.

Table 9 Panel A: Sample selection

Number of Non-financial firms available in S & P Capital IQ for the GCC countries	3,286
Less:	
Joint listed firms observation	-72
Firms with an unavailable annual report for corporate governance data	-1,688
Key control variables	-148
Total Observations	1,378

Table 9 Panel B: Sample Distribution by Country (frequency)

Country	Freq.	Percent	Number of joint audit firms
KSA	450	32.66	248
OMN	344	24.96	0
KUW	251	18.21	34
UAE	228	16.55	9
QAT	84	6.10	0
BAH	21	1.52	0
Total	1,378	100.00	291

Table 9 Panel C: Sample Distribution by industry (frequency)

Industries	Freq.	Percent
Materials	385	27.94

[13]Although joint-audit has been mandatory in Kuwait since 1995, practically we only find 34 observations that used joint auditors. This is because, first, many firms in Kuwait stock market are closed firms, not required to fully comply with the stock market regulation. Second, many firms in Kuwait provide financial statements but do not provide annual reports, therefore making it difficult for us to determine the identity of the auditors.

Industrials	350	25.40
Consumer Staples	240	17.42
Consumer Discretionary	170	12.34
Energy	51	3.70
Telecommunication Services	35	2.54
Utilities	56	4.06
Healthcare	31	2.25
Information Technology	8	0.58
Total	1,378	100.00

3.4.2 Measurement of the dependent and independent variables

3.4.2.1 Dependent variable

The dependent variable (COD) is calculated as Interest Expense (IR), measured as the interest expense of the firm divided by short-term and long-term debts during the year, following Bliss and Gul (2012) and Karjalainen (2011). The interest expense for the year is disclosed in the income statement and the short-term and long-term debt is disclosed in the balance sheet of the financial statements incorporated in the annual reports. If one of the two items is not disclosed in annual report or Capital IQ, we omit the full observation for that particular firm in that year.

3.4.2.2 Independent variables

The main independent variable of interest in this study is joint-audit firms (JA). Firms are identified as being JA firms if they are identified as such by annual reports and/or audit reports signed by two auditors. For regression analysis, we create an indicator variable, *JA*, coded 1 for firm-year observations with joint audit practices, and zero otherwise. Data on the composition of the auditor choice, the board and audit committee (AC) composition, and the data on ownership structure (e.g., CEO and government ownership) were manually collected from the published annual reports of the sample companies. We then create a series of indicator variables to capture different *JA* specifications. *JA_Big4*, coded 1 if one of the joint auditors is a Big 4 audit firm, and zero otherwise. *Audit1_Big4*, an indicator variable

coded 1 if the firm is audited by a single Big 4 audit firm, and zero otherwise. *Audit_Both_Big* is an indicator variable coded 1 if both audit firms are Big firms, and zero otherwise. Finally *Audit_Both_Local* is an indicator variable coded 1 if both audit firms are local firms, and zero otherwise.

3.4.2.3 Control variables

Based on prior research on the cost of debt studies (Bliss & Gul, 2012; Petersen & Rajan, 1994, Pittman & Fortin, 2004, Francis *et al*., 2005, Qiu & Yu, 2009; Badertscher *et al*., 2015), we include a set of control variables in our regression models: firm size (*SIZE*) measured as the natural logarithm of market value of equity at year-end (a negative coefficient is expected as larger firms are perceived as less risky by virtue of their having more assets in place and greater opportunities for economies of scale (Carey et al., 1993); working capital (current assets minus current liabilities) scaled by total assets (*WC*) (a negative coefficient is expected as firms with higher *WC* are more likely to service their debts); firm leverage measured as total debt scaled by market value of equity (*LEV*) (a positive coefficient is expected because of additional risks) (Petersen & Rajan, 1994)]; cash flow from operations scaled by total assets (*CF*) (a negative coefficient is expected as larger cash flows reduce a lenders' perceived risk); capital intensity measured as the gross PPE scaled by total assets (*PPE*) (expected to be negative as borrowers with more PPE are in a better position to provide security on their loans (Bliss & Gul, 2012); firm profitability proxied by *ROE* (net income divided by shareholders' equity) and *OP* (annual operating income scaled by total assets) (a negative coefficient is expected for profitable firms); growth opportunities measured as market capitalization value of firms divided by book value of equity (*GROWTH*) (a negative coefficient is expected as firms experiencing growth would be considered less likely to default on their loans).

We also include a set of corporate governance variables. Debtors are potentially concerned with board of director characteristics. Anderson *et al*., (2004) find that the audit committee characteristics are associated with cost of debt. We, therefore include AC in our regression. AC is a dummy variable coded 1 if the company has established an AC, and zero otherwise. We also follow Lin *et al*. (2013) to include insider CEO and government ownership: percentage CEO equity

ownership (*CEO_OWN*), and percentage government equity ownership (*GOV_OWN*). We also include country level measures to control for country specification. Firms domiciled in countries with strong legal rights enjoy debt financing at a lower cost and, hence, we expect a negative coefficient. We use the Strength of legal rights (*LEGAL_Rights*) which measures the degree to which collateral and bankruptcy laws protect the rights of borrowers and lenders and, thus, facilitate lending. The index ranges from 0 to 12, with higher scores indicating stronger protections. Lenders also value firms that are located in highly transparent jurisdictions, thus lowering the cost of debt of the borrowers. We include level of country disclosure (*DISC_Country*) that measures the internal, immediate and periodic disclosure requirements for related-party transactions (La Porta *et al*., 1998; Djankov *et al*., 2008).

3.4.2.4 Regression models

We estimate the following regression equation to examine the association between joint audit and cost of debt.

$$COD = \gamma_0 + \gamma_1 JA + \gamma_2 SIZE + \gamma_3 WC + \gamma_4 LEV + \gamma_5 CF + \gamma_6 PPE + \gamma_7 ROE + \gamma_8 GROWTH + \gamma_9 OP + \gamma_{10} AC + \gamma_{11} CEO\_OWN + \gamma_{12} GOV\_OWN + \gamma_{13} LEGAL\_Rights + \gamma_{14} DISC\_Country + Firm FE + Year FE + \varepsilon. \quad (1)$$

Where: *COD* is the cost of debt and *JA* is an indicator variable coded 1 if the firm-year are joint audit firms, and zero otherwise. Other variables are defined in the Appendix III. We expect a negative coefficient on γ_1 to suggest that the cost of debt will be lower for such firms compared to single audit firms.

We develop the following regression specification to test H^2 which posits the moderating role of firms' political connections with Royal families.

$$COD = \gamma_0 + \gamma_1 JA + \gamma_2 ROWN/(RDIR\_D) + \gamma_3 JA * ROWN/(RDIR\_D) + \gamma_4 SIZE + \gamma_5 WC + \gamma_6 LEV + \gamma_7 CF + \gamma_8 PPE + \gamma_9 ROE + \gamma_{10} GROWTH + \gamma_{11} OP + \gamma_{12} AC + \gamma_{13} CEO\_OWN + \gamma_{14} GOV\_OWN + \gamma_{15} LEGAL\_Rights + \gamma_{16} DISC\_Country + Firm FE + Year FE + \varepsilon \quad (2)$$

Where *ROWN* is a dummy if a firm has royal family ownership, otherwise 0, and *RDIR_D* is a dummy variable coded 1 if a firm has more than two royal family

directors on the board of directors[14], otherwise 0. If joint audit constrains the private benefits of control enjoyed by Royal directors, then we should expect a negative and significant coefficient on the interactive variable (γ_3).

3.4.2.5 Descriptive statistics

Table 10 (Panel A) reports the descriptive statistics for the dependent variable (*COD*), independent variables (*JA*), and (*ROWN*/*RDIR_D*) and control variables (*SIZE*, *WC*, *LEV*, *CF*, *PPE*, *ROE*, *GROWTH*, *OP*, *AC*, *CEO_OWN*, *GOV_OWN*, *LEGAL_Rights*, *DISC_Country*). The mean (median) of *COD* is 5.3% (4.1%). The independent variable, *JA*, has a mean of 0.21, indicating that about 21% of our firm-year observations are joint audit firms. The comparable figure in Andre et al. (2015) is 28%. Only 1% of the firm-year observations employ both Big 4 audit firms as the joint auditors. The comparable figure for both local (small) audit firms is 19%. For single audit setting, Big 4 auditor audits about 50% of the firm-year observations. About 9% firm-year observations have at least two Royal family owners and 39% of the board of directors are attended by Royal family members in the whole sample. The values of the control variables are generally consistent with prior research on GCC countries (e.g., Al-Hadi *et al*., 2016).

Table 10 (Panel B) presents univariate statistics (mean, t-statistic) of the difference in means for the regression variables between firms with and without joint audit practices. We find that the mean difference (t-statistic) of *COD* between *JA* and non-*JA* firms is significant at ($p<.01$), indicating *JA* firms enjoy lower cost of debt financing than their non-*JA* counterparts. Royal family ownership (directors) is also greater (lower) in *JA* (non-*JA*) firms than non-*JA (JA)* firms, and this result is significant at ($p<0.05$). We also find that *JA* firms are more profitable, are more

[14] A firm is politically connected if it has a large shareholder with political links who controls at least 10% of the firm's stocks; the firm is state owned; a founder of the firm is involved in management (Ding *et al*., 2014); or at least one of the executives or members of the board is also a member of parliament, the state government (Faccio, 2006; Chaney *et al*., 2011), a municipal council (Amore & Bennedsen, 2013), or is a high-ranking member of the military (Fan *et al*., 2007), a member of royalty or a ruling family member (Polsiri & Jiraporn, 2012). Connections with ruling family members include situations in which the politician or ruler himself is a large shareholder or a top director, and where a politician who is a close relative (e.g. brother, son or daughter) holds such a position.

capital-intensive, and have higher growth than non-*JA* firms. Finally, we find that firms with greater CEO and government ownership are less likely to employ joint auditors.

TABLE 10 Panel A: Descriptive Statistics

Variable	N	Mean	S.D.	0.25	Mdn	0.75
COD	1,378	0.05	0.09	0.02	0.04	0.06
JA	1,378	0.21	0.41	0.00	0.00	0.00
JA_Big4	1,378	0.01	0.07	0.00	0.00	0.00
Audit1_Big4	1,378	0.53	0.50	0.00	1.00	1.00
Audit_Both_Big4	1,378	0.01	0.07	0.00	0.00	0.00
Audit_Both_Local	1,378	0.19	0.39	0.00	0.00	0.00
ROWN	1,378	0.09	0.29	0.00	0.00	0.00
RDIR_D	1,378	0.38	0.49	0.00	0.00	1.00
SIZE	1,378	5.86	1.90	4.66	5.88	7.05
WC	1,378	0.13	0.19	0.02	0.11	0.23
LEV	1,378	0.56	0.87	0.07	0.24	0.68
CF	1,378	0.08	0.10	0.02	0.06	0.12
PPE	1,378	0.66	0.41	0.35	0.67	0.91
ROE	1,378	12.15	17.21	4.36	11.40	21.80
BVMV	1,378	2.14	1.79	1.01	1.61	2.66
OP	1,378	0.93	0.26	1.00	1.00	1.00
AC	1,378	0.06	0.11	0.02	0.06	0.11
CEO_OWN	1,372	0.01	0.06	0.00	0.00	0.00
GOV_OWN	1,372	0.08	0.17	0.00	0.00	0.06
LEGAL_Rights	1,378	3.76	0.73	3.00	4.00	4.00
DISC_Country	1,378	6.35	1.86	4.00	8.00	8.00

TABLE 10 Panel B: Univariate analysis

	Joint-Audit		t-value
	YES==1	No==0	
COD	0.036	0.064	-3.00***
ROWN	0.041	0.015	4.16***
RDIR_D	0.079	.4607	-12.47***
SIZE	6.756	5.480	15.38***
WC	0.154	-0.721	-0.77
LEV	0.392	0.402	-0.16
CF	0.099	-0.229	1.04
PPE	0.622	0.449	7.10***
ROE	11.148	8.669	1.59
GROWTH	2.557	2.232	2.93***

OP	0.077	0.057	3.87***
AC	0.870	0.952	-6.28***
CEO_OWN	0.015	0.009	2.16**
GOV_OWN	0.117	0.087	2.19**
LEGAL_Rights	3.786	3.475	7.59***
DISC_Country	7.175	5.27***	-20.93***

3.4.2.6 Correlation results

The correlation results are presented in Table 11. A significant and negative correlation is found between *COD* and the main independent variable, *JA* ($p< 0.01$), supporting our primary hypothesis that firms employing joint auditors enjoy lower cost of debt financing. *RDIR_D* and *COD* is positively correlated (at $p<.01$), while *ROWN* (*RDIR_D*) is positively (negatively) associated with *JA* firms (at $p<.01$). We also find a negative and significant correlation between *COD* and *SIZE*, *LEV*, *PPE*, *GROWTH*, and *DISC_Country* ($p< 0.10$). We find positive and significant correlations between *JA* and *SIZE*, *PPE*, *GROWTH*, and the country level variables. We also find a positive correlation between *RDIRD_D* and *COD*, which is consistent with Bliss and Gul (2006). However, the correlation between *COD* and *ROWN* is insignificant.

TABLE 11: Correlation analysis

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	*COD*	1															
2	*ROWN*	0.0077	1														
3	*RDIR_D*	0.10***	0.0002	1													
4	*JA*	-0.113***	0.09***	-0.363***	1												
5	*SIZE*	-0.107***	0.05***	-0.0093	0.377***	1											
6	*WA_TA*	0.137***	0.006	-0.0272	-0.034	-0.120***	1										
7	*LEV*	-0.052*	0.07***	-0.06***	-0.042	-0.191***	-0.318***	1									
8	*CF*	0.047*	0.009	-0.0369*	0.023	0.277***	0.242***	-0.241***	1								
9	*PPE_TA*	-0.158***	0.026	-0.24***	0.043	-0.058**	-0.182***	0.04	0.102***	1							
10	*ROE*	0.043	-0.009	-0.10***	-0.011	0.273***	0 211***	-0 227***	0.692***	-0.003	1						
11	*BVMV*	-0.028	0.017	-0.06***	0.087***	0.299***	0.041	-0 198***	0.337***	0.048*	0.380***	1					
12	*AC*	0.018	-0.003	-0.04**	-0.069**	-0.122***	0.024	-0.012	-0.032	0.116***	-0.062**	-0.036	1				
13	*OP*	-0.008	-0.015	0.13***	0.033	0.250***	0.241***	-0.282***	0.659***	0.038	0.727***	0.296***	-0.027	1			
14	*CEO_OWN*	0.031	-0.17***	0.71***	0.007	-0.023	-0.053**	-0.017	0.046*	-0.015	0.081***	0.083***	-0.085***	0.037	1		
15	*GOV_OWN*	-0.061**	-0.14***	0.55***	0.090***	0.249***	-0.017	-0.005	0.119***	0.276***	0.084***	-0.005	0.001	0.070***	-0.085***	1	
16	*LEGAL_Rights*	-0.051*	0.13***	-0.33	0.133***	-0.011	0.068**	-0.012	0.074***	0.239***	0.028	0.049*	0.166***	0.041	0.082***	0.094***	1
17	*DISC_Country*	-0.123***	0.005	-0.5	0.247***	-0.090***	0.056**	-0.065**	0.179***	0.362***	0.133***	0.216***	0.177***	0.136***	-0.012	0.119***	0.442***

*** p<0.01, ** p<0.05, * p<0.10
Variable definitions are provided in the AppendixIII.

3.5 Regression results

3.5.1 Joint audit and the cost of debt

The regression results are reported in Table 12. We estimate the regression specification at the firm level with firm robust standard errors (Petersen, 2009; Gow *et al*., Taylor, 2010). The coefficient on *JA*, our main variable of interest in Panel A is negative and significant (Model 1) providing support for H_1 (coefficient -0.0337, t-statistic -2.47, significant at $p<0.05$). This result is consistent with our theoretical prediction that joint audit provides an additional layer of assurance to mitigate the information asymmetry between lenders and borrowers, hence, reducing the cost of raising debt financing. In terms of economic significance, the estimated coefficient suggests a 3.37 basis point decrease in interest cost for firms employing joint auditors. The magnitude and significance of the coefficient becomes a little stronger when we include country-level variables to alleviate the country-effects (coefficient -0.037, t-stat -2.63, significant at $p<0.01$) (Model 2). Model (3) extends the baseline model by introducing a variable *JA_Big4*, an indicator variable coded 1 if one of the joint auditor is a Big 4 audit firm, and zero otherwise, to infer the incremental benefits of employing Big 4 audit firms. We find a negative and significant coefficient on *JA_Big4* (coefficient -0.034, t-statistic -2.37, significant at $p<0.05$). In Model (4) we run the main regression but replace *JA* with *Audit1_Big4* variable. Result is consistent with the proposition that high quality audit reduces the cost of debt (Pittman & Fortin, 2004; Karjalainen & Jukka, 2011). However, the coefficient is much smaller than the joint audit model with full set of control variables (-0.037 versus -0.019). In Model (5) we find the coefficient on *Audit_Both_Big* to be insignificant (only about 1% of firm-year observations being audited by both Big 4 audit firms). However, the coefficient on *Audit_Both_Local* becomes positive and significant if the joint audit firms are both local firms (coefficient 0.027, t-statistic 2.28, $p<0.05$) (Model 6). Thus creditors likely consider firms that are being audited by low quality auditor as risky firms and accordingly charge higher interest rates.

Table 12 Panel A: Joint audit and cost of debt: Pooled sample

$$COD = \gamma_0 + \gamma_1 JA + \gamma_2 SIZE + \gamma_3 WC + \gamma_4 LEV + \gamma_5 CF + \gamma_6 PPE + \gamma_7 ROE + \gamma_8 GROWTH + \gamma_9 OP + \gamma_{10} AC + \gamma_{11} CEO\_OWN + \gamma_{12} GOV\_OWN + \gamma_{13} LEGAL\_Rights + \gamma_{14} DISC\_County + Firm\,FE + Year\,FE + \varepsilon \quad (1)$$

	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)
Intercept	0.0019	-0.0547	-0.0508	0.0623	-0.0242	-0.0638
	(-0.04)	(-0.64)	(-0.60)	-0.67	(-0.21)	(-0.59)
JA	-0.0337**	-0.0367***	-	-		
	(-2.43)	(-2.62)				
JA_Big4	-	-	-0.0309**	-	-	-
			(-2.16)			
Audit1_Big4	-	-	-	-0.0168*	-	-
				(-1.70)		
Audit_Both_Big	-	-	-		0.0391	-
					(0.48)	
Audit_Both_Local	-	-	-	-	-	0.0267**
						(2.28)
SIZE	0.0099	0.0082	0.0081	0.0016	0.0088	0.0119
	(1.35)	(1.12)	(1.09)	(0.20)	(1.20)	(0.85)
WC	0.0473**	0.0450*	0.0442*	0.1017***	0.0403*	0.0451
	(2.03)	(1.93)	(1.89)	(3.84)	(1.73)	(1.05)
LEV	0.0013	0.0006	0.0004	0.0005	0.0009	0.0019
	(0.21)	(0.10)	(0.06)	(0.07)	(0.14)	(0.30)
CF	0.0409	0.0408	0.0394	0.0044	0.0291	0.0349
	(0.86)	(0.86)	(0.83)	(0.07)	(0.61)	(0.53)
PPE	0.0061	0.0045	0.0044	0.0248*	0.0063	0.0054
	(0.46)	(0.33)	(0.33)	(1.70)	(0.47)	(0.44)
ROE	0.0003	0.0003	0.0003	-0.0002	0.0002	0.0002
	(0.99)	(0.86)	(0.86)	(-0.42)	(0.81)	(0.55)
GROWTH	-0.0069***	-0.0065**	-0.0064**	-0.0053*	-0.0061**	-0.0065
	(-2.66)	(-2.50)	(-2.45)	(-1.96)	(-2.36)	(-1.44)
OP	0.0206	0.0177	0.0181	0.0029	-0.0560	-0.0580
	(1.55)	(1.31)	(1.34)	(0.20)	(-1.48)	(-1.41)
AC	-0.0677*	-0.0661*	-0.0653*	0.0772	0.0049	0.0251
	(-1.79)	(-1.75)	(-1.72)	(1.30)	(0.78)	(1.63)
CEO_OWN	0.0493	0.0537	0.0528	0.1042	0.0091	0.0281
	(0.58)	(0.64)	(0.63)	(1.13)	(0.65)	(0.48)
GOV_OWN	0.0338	0.0324	0.0318	0.0412	0.0088	-0.0007
	(1.00)	(0.96)	(0.94)	(0.99)	(1.20)	(-0.05)
LEGAL_Rights	-	0.006	0.006	0.0058	0.0403*	0.0059
	-	(0.96)	(0.95)	(0.98)	(1.73)	(1.15)
DISC_Country	-	0.0082	0.0075	-0.0039	0.0009	0.0042
	-	(0.58)	(0.53)	(-0.29)	(0.14)	(0.37)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes
Firm Dummies	Yes	Yes	Yes	Yes	Yes	Yes
N	1372	1372	1372	993	1372	1372
Adjusted R^2	0.264	0.264	0.264	0.266	0.281	0.283

Table 12 Panel B: Country-wise regression results

	Model (1)	Model (2)	Model (3)	Model (4)
	Without OMA, QAT, and BAH	KSA	KUW	UAE
Intercept	0.0582	0.1764	0.0312	0.2689
	(0.69)	(1.48)	(0.23)	(1.28)
JA	-0.0364***	-0.0192*	-0.1095**	-0.0424
	(-2.64)	(-1.71)	(-2.08)	(-1.03)
SIZE	0.0063	-0.0109	0.0238	-0.0273
	(0.51)	(-0.94)	(0.90)	(-0.76)
WC	0.0033	0.0828**	-0.1628	0.0861**
	(0.08)	(2.05)	(-1.51)	(2.41)
LEV	0.0042	0.0075	0.0186	-0.0109
	(0.54)	(0.89)	(1.10)	(-0.72)
CF	0.0856	0.1826**	0.0621	0.1581
	(1.04)	(2.44)	(0.39)	(0.65)
PPE	-0.0070	0.0085	-0.0874	-0.0213
	(-0.46)	(0.81)	(-1.01)	(-0.62)
ROE	0.0004	-0.0008*	0.0013**	-0.0008
	(0.94)	(-1.83)	(2.00)	(-1.36)
GROWTH	-0.0083	-0.0085	-0.0246*	0.0051
	(-1.60)	(-1.35)	(-1.84)	(0.36)
OP	0.0149	-0.0001	0.0142	-0.0104
	(1.00)	(-0.01)	(0.25)	(-0.53)
AC	-0.1102**	0.0297	-0.1948***	-0.0187
	(-2.47)	(0.30)	(-3.18)	(-0.08)
CEO_OWN	-0.0237*	-0.0369	-0.0521*	-0.0074
	(-1.65)	(-1.58)	(-1.69)	(-0.53)
GOV_OWN	0.0012	0.0039	0.0035	-0.0429
	(0.07)	(0.39)	(0.08)	(-0.90)
Year Dummies	Yes	Yes	Yes	Yes
Firm Dummies	Yes	Yes	Yes	Yes
N	929	450	251	228
Adjusted R^2	0.038	0.102	0.121	0.027

Robust t-statistics in parentheses.
*** p<0.01, ** p<0.05, * p<0.10
Variable definitions are provided in the AppendixIII.

In panel B Table 12 we report the regression results of equation (1) for respective countries in the sample. Because most of the GCC countries, except Kuwait, do not mandate joint audit for non-financial firms, a pooled regression analysis may reduce the power of the test Model 1 presents the results after excluding countries that do not have joint audit firms (Oman, Qatar and Bahrain). We find consistent results with the base-line regression, i.e., the coefficient on *JA* is

negative and significant (coefficient -0.036, t-stat -2.64, p<0.05). In Models 2, 3 and 4 we regress *COD* on *JA* for all countries with *JA* practices (KSA, Kuwait and UAE respectively). Model 2 finds a negative and significant coefficient of 0.017 at t-stat -1.71 for the KSA firms, and for Model 3 we find a negative and significant association between *COD* and *JA* for Kuwait. Finally, we find the COD's coefficient is negative but insignificant for the UAE firms.

Next, we examine the *COD* between *JA* firms and *JA* peers matched according to propensity scores. This is justified since many of the variables are significantly different between firm-year observations with joint audit versus observations with single audit. The propensity score matching (PSM) is performed as follows. First, we require that the candidate firm for the matching sample to have joint-audit. Second based on Zerni *et al*. (2010) we use (logit model) four variables that determine the joint audit firms (Profitability, Book-To-Market, Leverage, and Directors ownership).[1] Third, among the potential control sample firms, we select the optimal match, based on the nearest neighbor technique of the propensity score matching (PSM) procedure, in an attempt to control for differences in characteristics between joint audited and non-joint audited firms (Rosenbaum & Rubin, 1983; Heckman et al., 1997, 1998). To calculate the propensity score, we analyse a comprehensive set of firm characteristics that should capture the likelihood that a given firm will be joint audited according to prior research. This matching procedure translates into a sample of 253 firm-year observations, equally into *JA* firms and non-*JA* firms. Despite the major data attrition that accompanies constructing a matched sample using propensity scores in our setting, an upside of applying this technique here is the large number of potential matches with non-*JA* observations, ensuring that the joint audited and non-joint audited samples have extremely close propensity scores.

Model 1, Table 13 reveals that *JA* firms enjoy significantly lower cost of debt than their propensity score matched peers (coefficient on *JA* is -0.0200, t-statistic -2.23, p<0.05). In Models (2), (3), and (4) we also report our analysis using

[1] Following Austin (2011) and Jameson et al. (2014) we then test the difference using univariate t-statistic for the matched and unmatched samples. In particular, we try to check if there is any significant difference between the Control sample (non- *JA*) and treated sample (*JA*).Un-tabulated results show that none of the included covariate is significantly different between *JA* versus non-*JA* sub-samples, providing strong support for our estimation.

four additional propensity score techniques (Calliper 1%, Calliper 5%, and Kernal). All provide consistent results that have been documented in our main regressions.

Table 13 Propensity Match Scoring (PSM)

	Model (1)	Model (2)	Model (3)	Model (4)
	Matching using Nearest - neighbour	Matching using calliper(0.01)	Matching using calliper(.05)	Matching using Kernel
		Cost of Debt (COD)		
Intercept	0.2218	0.0517	0.1540	0.1540
	(0.91)	(0.25)	(0.68)	(0.68)
JA	-0.0200**	-0.0280***	-0.0225**	-0.0225**
	(-2.23)	(-2.66)	(-2.38)	(-2.38)
SIZE	-0.0135	0.0165	-0.0050	-0.0050
	(-0.53)	(0.71)	(-0.20)	(-0.20)
WC	0.1561**	0.1946**	0.1437*	0.1437*
	(2.03)	(2.29)	(1.93)	(1.93)
LEV	-0.0067	0.0136	-0.0014	-0.0014
	(-0.33)	(0.64)	(-0.07)	(-0.07)
CF	0.1518	0.1502	0.1995	0.1995
	(0.91)	(0.94)	(1.18)	(1.18)
PPE	0.0030	-0.0243	0.0050	0.0050
	(0.11)	(-0.94)	(0.17)	(0.17)
ROE	-0.0012	-0.0006	-0.0011	-0.0011
	(-1.64)	(-0.83)	(-1.51)	(-1.51)
GROWTH	-0.0120	-0.0244	-0.0172	-0.0172
	(-1.10)	(-1.67)	(-1.44)	(-1.44)
OP	0.0493	-0.0123	0.0599	0.0599
	(0.36)	(-0.10)	(0.45)	(0.45)
AC	-0.0245	-0.0227	-0.0240	-0.0240
	(-1.54)	(-1.19)	(-1.43)	(-1.43)
CEO_OWN	0.0138	0.0030	0.0044	0.0044
	(0.10)	(0.02)	(0.03)	(0.03)
GOV_OWN	0.9621**	0.8355	0.9518*	0.9518*
	(2.06)	(1.02)	(1.95)	(1.95)
Year Dummies	Yes	Yes	Yes	Yes
Firm Dummies	Yes	Yes	Yes	Yes
N	253	245	252	252
Adjusted R^2	0.256	0.304	0.274	0.274

Robust t-statistics in parentheses.
*** p<0.01, ** p<0.05, * p<0.10
Variable definitions are provided in the AppendixIII.

3.5.2 Joint audit, royal family political connections, and cost of debt

We now discuss the results for H2. We hypothesised that the association between joint audit and cost of debt is moderated by political connections with Royal families (*PCR*). We use Royal Family Ownership (*ROWN*) and Royal family director (*RDIR_D*) as proxies for political connections. Table 14 Panel A shows the regression models for the interaction term between (*ROWN* / *RDIR_D*) and *JA* and their impact on the cost of debt. Models (1) and (2) in Panel A, Table 14 presents the augmented regression results where we incorporate the interactive variable (*JA* ROWN*) without (with) country-level factors, while Models (3) and (4) report results of the interacted term (*JA* RDIR_D*) without (with) country-level factors. In all models we find consistent evidence that joint audit reduces cost of debt, and this beneficial effect is more pronounced for firms with political connections to Royal family members as is evident from the negative and significant coefficient on the interactive variable (coefficient -0.038, t-stat -2.18, $p<0.05$ in Model 1). We also find robust evidence for having a Royal family director on the board (*RDIR_D*). For instance, in Table 14, Panel A, Model (3), the coefficient of the interacted term is -0.038 (t-stat -1.92, significant at $p<0.1$).

We then as a robustness check use a sub-sampling technique to test the impact of *JA* on the relationship between *PCR* using royal family ownership and cost of debt in Table 14, Panel B. Models 1-4 present our results for the association between *ROWN* and *COD.* For Models 5-8 results are provided for the association between *RDIR_D* and *COD*. Our results do not change from our main inference that we find the coefficient of Model 1 Panel B in Table 14 is -0.37 for the (*ROWN*) royal family sub-sample, the coefficient is -0.38 for Model 2 Panel B both negative and significant (at $p< 1\%$). In both Models 3 and 4 for non-*JA*, we find the coefficient for *ROWN* is not significant and much smaller than in Models 1 & 2. We then test this regression with (*RDIR_D*) for the sub-sample of *JA* versus non-*JA* firms. We find the coefficients on both *RWON* and *RDIR_D* to be negative and significant only for *JA*=1 but not for *JA*=0 firm-year observations. For example, in models (5) and (6), the coefficient on *RDIR_D* are negative and significant [coefficients of -0.0267 (-0.0269), $p<.10$)] for the *JA* sub-sample.

In Panel C, we also report prior analysis using high (low) royal ownership and royal directors. In all regressions, we find robust results that in high royal

ownership concentration firms with JA enjoy less cost of debt, compared to lower royal ownership and directors. Taken together, we find evidence consistent with H2 which suggest that firms' political connections with Royal Families affect its cost of debt.

Table 14 Joint audit and cost of debt: Impact of political connections with Royal families (*PCR*)

$$COD = \gamma_0 + \gamma_1 JA + \gamma_2 ROWN/(RDIR\_D) + \gamma_3 JA * ROWN/(RDIR\_D) + \gamma_4 SIZE + \gamma_5 WC + \gamma_6 LEV + \gamma_7 CF + \gamma_8 PPE + \gamma_9 ROE + \gamma_{10} GROWTH + \gamma_{11} OP + \gamma_{12} AC + \gamma_{13} CEO\_OWN + \gamma_{14} GOV\_OWN + \gamma_{15} LEGAL\_Rights + \gamma_{16} DISC\_County + FirmFE + YearFE + \varepsilon \quad (2)$$

Table 14 Panel A: JA, political connection and cost of debt

	Model (1)	Model (2)	Model (3)	Model (4)
Intercept	0.0452**	-0.0175	0.0376	-0.0139
	-2.41	(-0.49)	-0.58	(-0.12)
JA	-0.0120*	-0.0142**	-0.0286**	-0.0314**
	(-1.96)	(-2.32)	(-2.13)	(-2.33)
ROWN	0.0077	0.0081	-	-
	(-0.90)	(-0.96)		
*JA * ROWN*	-0.0380**	-0.0429**	-	-
	(-2.18)	(-2.47)		
RDIR_D	-	-	-0.0064	-0.007
	-	-	(-0.55)	(-0.61)
*JA * RDIR_D*	-	-	-0.0381*	-0.0404*
	-	-	(-1.92)	(-1.96)
SIZE	0.0025	0.001	0.009	0.0072
	(-0.85)	(-0.33)	(-0.65)	(-0.52)
WC	0.0212**	0.0192**	0.0392	0.0378
	(-2.24)	(-2.04)	(-0.88)	(-0.84)
LEV	0.0004	0.0001	0.0006	0.001
	(-0.36)	(-0.08)	(-0.10)	0
CF	0.0272	0.0262	0.0393	0.0392
	(-1.28)	(-1.24)	(-0.58)	(-0.58)
PPE	0.0002	-0.0005	-0.0231	-0.0217
	(-0.04)	(-0.11)	(-0.73)	(-0.69)
ROE	-0.0001	-0.0001	-0.0003	-0.0003
	(-0.47)	(-0.74)	(-0.83)	(-0.73)
GROWTH	-0.0024**	-0.0020*	(-0.0066)	(-0.0062)
	(-2.18)	(-1.85)	(-1.52)	(-1.38)
OP	0.0043	0.0014	0.0213	0.0186
	(-0.77)	(-0.24)	(-1.52)	(-1.36)

AC	-0.0079	-0.004	-0.067	-0.0651
	(-0.27)	(-0.14)	(-1.59)	(-1.56)
CEO_OWN	-0.0100**	-0.0098**	-0.0210**	-0.0209**
	(-2.07)	(-2.03)	(-2.15)	(-2.11)
GOV_OWN	0.002	0.002	0.0095	0.0097
	(-0.41)	(-0.40)	(-0.78)	(-0.80)
LEGAL_Rights	-	0.0045*	-	0.0066
	-	(-1.75)	-	(-0.56)
DISC_Country	-	0.0097*	-	-0.0139
	-	(-1.66)	-	(-0.12)
Year Dummies	Yes	Yes	Yes	Yes
Firm Dummies	Yes	Yes	Yes	Yes
N	1,378	1,378	1,378	1,378
Adjusted R^2	0.219	0.206	0.035	0.036

Robust t-statistics in parentheses. *** p<0.01, ** p<0.05, * p<0.10
Variable definitions are provided in the Appendix III.

Table 14 Panel B:Sub-sampling JA vs non-JA using Royal family Ownership and Royal family directors in the board

	JA=1	JA=1	JA=0	JA=0	JA=1	JA=1	JA=0	JA=0
	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)	Model (6)	Model (7)	Model (8)
Intercept	0.2033***	0.0999*	0.0509	0.2325	0.2064***	0.1325	0.1503	0.2535
	(3.65)	(1.73)	(0.87)	(0.86)	(2.66)	(1.12)	(1.46)	(1.50)
Royal Family Ownership (ROWN)	-0.37***	-0.38***	0.0753	0.0539	-	-	-	-
	(-2.78)	(-7.58)	(0.78)	(0.59)				
Royal Family Director (RDIR_D)	-	-	-	-	-0.0267*	-0.0269*	-0.0055	-0.0059
					(-1.77)	(-1.78)	(-0.19)	(-0.21)
SIZE	-0.0182**	-0.0192**	0.0078	0.0089	-0.0258**	-0.0256**	-0.0311*	-0.0306*
	(-2.43)	(-2.53)	(0.87)	(1.00)	(-2.36)	(-2.34)	(-1.81)	(-1.78)
WC	0.0337	0.0363	0.0673**	0.0539*	0.0492	0.0510	0.2270***	0.2254***
	(1.62)	(0.83)	(2.20)	(1.75)	(1.58)	(1.63)	(4.85)	(4.74)
LEV	-0.0126*	-0.0122	-0.0052	-0.0008	0.0089	0.0107	0.1428**	0.1418**
	(-1.88)	(-1.64)	(-0.74)	(-0.11)	(0.19)	(0.23)	(2.44)	(2.41)
CF	0.1166*	0.1324	0.0189	0.0175	0.1110	0.1136	-0.1257	-0.1237
	(1.79)	(1.57)	(0.32)	(0.30)	(1.40)	(1.42)	(-1.52)	(-1.49)
PPE	-0.0354	-0.0359	0.0230	-0.0199	0.0086	0.0087	-0.0040	-0.0046
	(-1.56)	(-1.09)	(0.62)	(-0.54)	(0.74)	(0.75)	(-0.25)	(-0.28)
ROE	-0.0004	-0.0005	0.0002	0.0003	-0.0003	-0.0003	0.0010**	0.0010**
	(-1.32)	(-1.44)	(0.51)	(0.75)	(-0.81)	(-0.80)	(2.09)	(2.02)
GROWTH	0.0018	0.0019	-0.0054	-0.0085**	-0.0000	-0.0000	0.0000	0.0000
	(0.85)	(0.99)	(-1.52)	(-2.47)	(-0.23)	(-0.24)	(0.24)	(0.24)
OP	-0.0079	-0.0098	0.0127	0.0040	-0.0064	-0.0065	0.0222	0.0243
	(-0.58)	(-1.32)	(0.73)	(0.23)	(-0.34)	(-0.35)	(1.12)	(1.21)
AC	-0.0823	-0.0865	-0.0519	-0.0688	-0.0947	-0.0986	0.0015	0.0044
	(-0.96)	(-0.80)	(-1.05)	(-1.45)	(-0.98)	(-1.01)	(0.02)	(0.06)
CEO_OWN	-0.0216**	-0.0202***	-0.0227	-0.0195	-0.0199*	-0.0198*	-0.0031	-0.0053
	(-2.27)	(-3.09)	(-1.47)	(-1.31)	(-1.97)	(-1.95)	(-0.15)	(-0.26)
GOV_OWN	0.0120	0.0107	-0.0076	-0.0030	0.0194*	0.0191*	0.0129	0.0128
	(1.21)	(1.41)	(-0.48)	(-0.20)	(1.76)	(1.71)	(0.70)	(0.69)
LEGAL_Rights	-	-0.0054	-	0.0139	-	-0.0032		0.0138
	-	(-1.00)	-	(1.30)	-	(-0.49)		(1.28)
DISC_Country	-	0.0195***	-	-0.0086	-	0.0125		-0.0232
	-	(3.04)	-	(-0.37)	-	(0.83)		(-0.97)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	297	291	623	1,086	289	289	740	740
Adjusted R^2	0.158	0.114	623	-0.294	-0.214	-0.222	-0.208	-0.209

Table 14 Panel C: Sub-sampling High Royal Ownership (Royal Directors) vs Low Royal Ownership (Royal Directors) using JA

	Cost of Debt (COD)							
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
	High RoyalOwn	Low RoyalOwn	High RoyalOwn	Low RoyalOwn	High Royal Dir	Low Royal Dir	High Royal Dir	Low Royal Dir
Intercept	0.0545	-0.0374	-0.0363	-0.0289	0.0345	-0.0283	-0.1244	0.1150
	(0.43)	(-0.61)	(-0.22)	(-0.22)	(0.36)	(-0.38)	(-0.77)	(0.67)
Joint-Audit	-0.0263*	-0.0254	-0.0346**	-0.0264	-0.0235*	-0.0289	-0.0287*	-0.0316
	(-1.87)	(-1.31)	(-2.19)	(-1.26)	(-1.72)	(-1.08)	(-1.88)	(-1.19)
SIZE	0.0004	0.0074	-0.0045	0.0068	0.0007	0.0168	0.0021	0.0081
	(0.02)	(0.53)	(-0.28)	(0.82)	(0.05)	(1.62)	(0.17)	(0.76)
WC	0.0376	0.1019	0.0193	0.1022***	0.0662*	0.0688**	0.0605**	0.0627*
	(1.01)	(1.47)	(0.59)	(3.24)	(1.87)	(1.98)	(2.03)	(1.78)
LEV	0.0011	0.0016	-0.0021	0.0015	-0.0017	0.0018	0.0043	-0.0004
	(0.09)	(0.26)	(-0.18)	(0.20)	(-0.16)	(0.21)	(0.42)	(-0.04)
CF	0.1277	0.0436	0.1208	0.0443	-0.0180	0.0117	-0.0010	0.0609
	(1.17)	(0.51)	(1.11)	(0.74)	(-0.13)	(0.16)	(-0.01)	(0.81)
PPE	-0.0189	0.0288**	-0.0317	0.0293	0.0084	0.0309	-0.0046	0.0224
	(-0.79)	(1.99)	(-1.24)	(1.63)	(0.58)	(1.18)	(-0.30)	(0.84)
ROE	0.0009*	-0.0001	0.0007	-0.0001	0.0001	0.0000	0.0000	-0.0000
	(1.87)	(-1.03)	(1.62)	(-0.80)	(0.42)	(0.03)	(0.16)	(-0.13)
GROWTH	-0.0000*	0.0000**	-0.0000	0.0000	0.0000***	-0.0000	0.0000***	0.0000
	(-1.81)	(2.22)	(-1.48)	(0.57)	(3.82)	(-0.08)	(3.96)	(0.00)
OP	0.0041	0.0609*	0.0037	0.0596**	0.0154	0.0530	-0.0001	0.0466
	(0.50)	(1.87)	(0.45)	(2.40)	(1.00)	(1.51)	(-0.01)	(1.32)
AC	-0.3062	-0.0305	-0.2717	-0.0303	-0.0767	-0.0393	-0.0922	-0.0404
	(-1.45)	(-0.70)	(-1.33)	(-0.83)	(-0.62)	(-0.87)	(-0.73)	(-0.92)
CEO_OWN	-0.0054	0.0773	0.0185	0.0790	-0.0030	0.1059	0.0198	0.1100
	(-0.09)	(0.93)	(0.26)	(0.67)	(-0.07)	(0.55)	(0.35)	(0.58)
GOV_OWN	-0.0168	0.0025	-0.0233	0.0035	-0.0259	0.0017	-0.0251	0.0090
	(-0.76)	(0.15)	(-1.02)	(0.18)	(-1.37)	(0.07)	(-1.29)	(0.38)
LEGAL_Rights	-	-	0.0155*	0.0037	-	-	0.0023	0.0116
	-	-	(1.82)	(0.43)	-	-	(0.46)	(1.00)
DISC_Country	-	-	0.0174	-0.0027	-	-	0.0282*	-0.0238
	-	-	(1.10)	(-0.13)	-	-	(1.79)	(-0.84)
Year Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Firm Dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R^2	542	831	542	831	658	796	619	754
SIZE	0.277	0.292	0.285	0.290	0.258	0.253	0.294	0.253

3.5.3 Sensitivity tests

Size partition: In our first sensitivity test we investigate whether firm size plays a moderating role on the association between joint audit and cost of debt. We follow Francis et al. (2005) and rank firms into quintiles. Firms in the top quintile consist of the largest firms whilst firms in the bottom quintile consist of the smallest firms. Quintile ranks rather than raw values alleviates the effects of extreme observations and allows us to interpret the resulting coefficient estimates as the incremental risk premium associated with adjacent quintiles. The quintile-based result reveals that the coefficient on JA is negative and significant in quintiles 3 and 4 only whilst insignificant in other quintiles.

The coefficients are negative in small size firms, and negative and significant for middle size firms, and found no association between JA and COE for bigger firms. Our results, consistent with the view that large firms are more visible and, therefore, may be more likely to comply with accounting standards and disclosures requirements. Research in developed markets (e.g., Watts and Zimmerman 1978; Holthausen and Leftwich 1983) argue that larger companies act to protect their reputation and avoid government intervention. While in the GCC countries where large companies are politically visible and economically important and most likely bigger firms are government and privatized firms. In addition, larger companies have more resources to spend on compliance and are less likely to be affected by disclosure of proprietary information than smaller companies, more likely to hire qualified accounting and better internal control system. Another relevant point is that larger companies may be older, with more established reporting systems, meaning that compliance is less costly for them. This suggested larger firms are less likely to employ two auditors compared to middle size (growth) firms. While prior research such as Al-Hadi et al. 2016 find the growth (middle partition firms) more likely to have conservative auditors. Consistent with this view, middle size firms more likely to have conservative audit and employ two auditors.

Table 15 Joint audit and cost of debt: Size partition

	Model (1) All variables with 5 quintiles	Model (2) Quintile (1)	Model (3) Quintile (2)	Model (4) Quintile (3)	Model (5) Quintile (4)	Model (6) Quintile (5)
			Cost of Debt			
Intercept	4.1492***	0.0672***	-0.1829	-0.1225	-0.0108	0.0538
	(6.48)	(3.55)	(-0.81)	(-1.24)	(-0.17)	(1.23)
JA	-0.0906*	-0.0207	-0.0272	-0.0680***	-0.0219**	0.0033
	(-1.92)	(-0.44)	(-0.45)	(-3.17)	(-2.09)	(0.47)
WC	0.0349	0.0271	-0.0445	0.1058***	-0.0263	0.0458**
	(0.82)	(1.11)	(-1.39)	(3.65)	(-1.04)	(2.29)
LEV	-0.2547***	-0.0041	-0.0120	0.0101	-0.0173**	0.0005
	(-4.08)	(-1.31)	(-1.05)	(0.97)	(-2.04)	(0.15)
CF	0.0335	-0.0344	-0.0414	0.1707***	0.1240*	-0.0024
	(0.64)	(-0.84)	(-0.42)	(2.81)	(1.90)	(-0.06)
PPE	0.1046**	-0.0206**	-0.0060	-0.0239	0.0099	0.0174**
	(2.06)	(-2.55)	(-0.21)	(-1.13)	(0.72)	(2.04)
ROE	0.0122	-0.0003	-0.0001	-0.0006	0.0002	-0.0000
	(0.24)	(-1.08)	(-0.19)	(-1.52)	(0.63)	(-0.04)
GROWTH	-0.0641	0.0034	-0.0060	0.0066*	-0.0006	-0.0021
	(-1.46)	(1.05)	(-1.30)	(1.73)	(-0.23)	(-1.20)
AC	-0.0805	0.0000	0.0047	0.0030	-0.0283*	0.0062
	(-1.42)	(0.00)	(0.17)	(0.21)	(-1.91)	(0.87)
OP	0.0167	0.0792	0.0549	-0.0598	-0.1853***	0.0277
	(0.43)	(1.39)	(0.53)	(-0.75)	(-3.04)	(0.40)
CEO_OWN	-0.2719*	0.2079**	-0.0529	-0.0468	-0.0762	1.9168***
	(-1.77)	(2.03)	(-0.35)	(-0.40)	(-1.22)	(4.50)
GOV_OWN	-0.1778	-0.0124	-0.0260	0.0015	-0.0223*	-0.0101
	(-1.15)	(-0.38)	(-1.35)	(0.10)	(-1.69)	(-1.31)
LEGAL_Rights	0.0599	0.0000	0.0228	0.0202***	-0.0043	-0.0031
	(1.43)	(0.00)	(1.41)	(2.74)	(-0.86)	(-0.81)
DISC_Country	0.2561	0.0000	0.0365	0.0121	0.0190	-0.0040
	(1.37)	(0.00)	(0.91)	(0.71)	(1.63)	(-0.51)
Year Dummies	YES	YES	YES	YES	YES	YES
Firm Dummies	YES	YES	YES	YES	YES	YES
N	1372	247	229	268	298	330
	0.479	0.394	0.325	0.400	0.461	0.590

Robust t-statistics in parentheses.
*** p<0.01, ** p<0.05, * p<0.10
Variable definitions are provided in the Appendix III.

3.5.4 Joint audit and cost of debt with corporate governance variables excluded:

In all our regression specifications we included three corporate governance variables, namely *AC*, *CEO_OWN* and *GOV_OWN*: a choice that reduced the sample size substantially. We rerun our analysis excluding these variables. Our sample size increases to 2,269 firm-year observations. We find negative and significant coefficients on *JA* and *JA_Big4* (un-tabulated).

3.5.5 Joint audit and cost of debt with earning management interaction:

We follow the established literature (e.g., Karjalainen 2011) that high quality audit improves information environment (e g., Becker et al., 1998; Balsam et al., 2003). We use John accruals quality, in particular discretionary accruals. Consistent with the view that joint audit enhances the firm's accruals quality, Table 16 provides evidence that joint audit reduces the cost of debt via reducing the firm's earning management. For instance, in model 1 and Model 2 in Table 16, we find the joint audit coefficient (a_1) has negative and significant with cost of debt, coefficient of John model is positive and significant with the cost of debt, while the interaction coefficient (JA X John_EM) is negative and significant. From model 3 to 6, we re-test our analysis using sub-sampling technique. We divide our sample based on John 1991 Model that firms higher than the mean of industry and year are considered lower accrual quality, and firms with lower than mean of industry and country John 1991 model are considered as higher accrual quality. We find in Model 4 and 6 firms with high accrual quality sub-sample that JA reduces the cost of debt. This suggests that joint audit reduces the cost of debt via reducing the accrual quality.

Table 16 Effect of JA, Earning Management on the Cost of Debt:

	Model (1)	Model (2)		Model (3)	Model (4)	Model (5)	Model (6)
	Cost of Debt			Cost of Debt			
				Low Accrual Quality	High Accrual Quality	Low Accrual Quality	High Accrual Quality
Intercept	-0.0287	-0.0106	Intercept	-0.1183	0.0550	0.6805**	-0.0189
	(-0.61)	(-0.10)		(-0.67)	(0.98)	(2.39)	(-0.19)
JA	-0.0194**	-0.0212**	***JA***	**0.0183**	**-0.0293***	**0.0938***	**-0.0335***
	(-1.97)	(-2.13)		**(0.23)**	**(-1.74)**	**(1.83)**	**(-1.93)**
John_EM	0.0018***	0.0018***					
	(3.98)	(3.95)					

*JA * John_EM*	-0.0894**	-0.0852**					
	(-2.44)	(-2.38)					
SIZE	0.0008	0.0009	*SIZE*	0.0501	-0.0011	0.0492	-0.0046
	(0.23)	(0.25)		(1.51)	(-0.12)	(1.46)	(-0.54)
WC	0.1417**	0.1382**	*WC*	-0.1257	0.0282	-0.1171	0.0207
	(2.10)	(2.04)		(-0.82)	(0.33)	(-0.75)	(0.24)
LEV	0.1004*	0.0957*	*LEV*	-0.0041	-0.1139	-0.0154	-0.1243
	(1.74)	(1.69)		(-0.02)	(-1.18)	(-0.07)	(-1.28)
CF	-0.0099**	-0.0099**	*CF*	0.7054	0.0195	0.6895	0.0196
	(-2.04)	(-2.03)		(1.34)	(1.01)	(1.25)	(1.01)
PPE	0.0176	0.0154	*PPE*	-0.0128	-0.0034	-0.0121	-0.0079
	(1.42)	(1.26)		(-0.95)	(-0.21)	(-0.77)	(-0.47)
ROE	-0.0008	-0.0009	*ROE*	0.0037	0.0000	0.0036	0.0000
	(-0.68)	(-0.74)		(0.74)	(0.02)	(0.72)	(0.02)
GROWTH	-0.0038	-0.0037	*GROWTH*	-0.0112	0.0022	-0.0118	0.0027
	(-1.15)	(-1.13)		(-1.23)	(0.36)	(-1.26)	(0.44)
OP	0.0058	0.0058	*OP*	-0.0099	0.0231	-0.0133	0.0193
	(0.72)	(0.70)		(-0.31)	(1.27)	(-0.38)	(1.10)
AC	0.0167	0.0172	*AC*	-1.0924	-0.0470	-1.1197	-0.0478
	(1.25)	(1.28)		(-1.62)	(-0.79)	(-1.62)	(-0.80)
CEO_OWN	0.0426	0.0460	*CEO_OWN*	0.2719**	0.0206	0.2702*	0.0308
	(0.77)	(0.83)		(2.17)	(0.28)	(1.97)	(0.41)
GOV_OWN	-0.0234	-0.0236	*GOV_OWN*	-0.0216	0.0004	-0.0237	0.0009
	(-1.40)	(-1.39)		(-0.54)	(0.02)	(-0.58)	(0.05)
LEGAL_Rights	-	0.0070*	*LEGAL_Rights*	-	-	0.0972**	0.0092**
	-	(1.74)		-	-	(2.59)	(2.15)
DISC_Country	-	-0.0067	*DISC_Country*	-	-	-0.1763***	0.0106
	-	(-0.48)		-	-	(-4.07)	(0.86)
Year Dummies	Yes	Yes	Year Dummies	Yes	Yes	Yes	Yes
Firm Dummies	Yes	Yes	Firm Dummies	Yes	Yes	Yes	Yes
N	1323	1323	N	202	1214	202	1214
Adjusted R^2	0.228	0.228	Adjusted R^2	0.518	0.267	0.518	0.269

3.6 Conclusion

The objective of this study is to build on and extend the scope of recent and ongoing research on join-audit (Francis *et al*. 2009; Bedard *et al*., 2012). While old wisdom suggests that two heads are better than one, empirical evidence on the impact of joint audit is inconclusive. We shed new insights into the joint audit literature by investigating the effects of joint versus single-audit on firm-level cost of debt in GCC countries, and whether this association is moderated by political connections. We find that joint audit reduces the cost of debt by 3.37 basis points, compared to single-audit practices. We further document that the beneficial effect of joint audit in terms of lower cost of debt is greater for firms with political connections to Royal families in the GCC region.

Our study contributes to the literature in the following ways. First, we enrich the scant literature on the audit quality implications of joint audit by examining the effects of joint audit on the cost of debt, given the significance of the debt markets in the GCC. Second, we contribute to the literature on the contracting role of accounting from both the external auditing and debt financing perspectives. Agency theory, as advanced by Jensen and Meckling (1976), implies that agents may employ joint auditors to reduce information asymmetry and, thus, agency costs. Companies with high leverage can be expected to appoint joint auditors to reduce agency costs by reassuring debtholders that their interests are protected. Finally, we enrich the research on corporate governance in GCC countries by documenting a beneficial role of external auditor, a key governance mechanism.

Like other cross-country empirical studies, our study has limitations. In particular, JA practices and regulations are mixed. For instance, in Kuwait It is mandatory by law, and voluntary for other countries. Therefore, we conducted country-wise analysis to alleviate this limitation. This study is also limited by number of observations and time frame, we consider 10 years period is sufficient period as most the GCC firms start publishing their annual reports from 2007-2008. The findings of this study have important implications for regulators. In particular, joint audit is voluntary for non-financial firms in all GCC countries except Kuwait. The finding that joint audit reduces the cost of debt is likely to encourage regulators to generalize this requirement to all GCC countries that have not yet mandated it. The adoption of this suggestion could be expected to improve the information environment in the GCC. It is expected that the findings of this study will be instructive and applicable to other countries in the Middle East region, due to their social, political, and economic similarities. Regarding the international convergence of audit practice and

standards, this study can inform global regulators' deliberations on the desirability of joint audits. Future research may investigate effects of JA on the financial policy and cost of equity capital.

Appendix III

Variables definition

COD	Cost of debt calculated as total interest expenses scaled by total interest-bearing liabilities.
JA	An indicator variable coded 1 if the firm is by two auditors, and 0 otherwise
JA_Big4	An indicator variable coded 1 if one of the joint auditors is a Big 4 audit firm, and 0 otherwise.
Audit1_Big4	an indicator variable coded 1 if the firm is audited by a single Big 4 audit firm, and zero 0 otherwise
Audit_Both_Big	An indicator variable coded 1 if Both Auditor are Big 4 audit firms, and 0 otherwise.
Audit_Both_Local	An indicator variable coded 1 if Both Auditor are local firms, and 0 otherwise.
ROWN	Royal family ownership %
RDIR_D	Dummy variable equal to 1 if a firm has more than two royal family directors in the board, otherwise 0.
SIZE	Natural Logarithm of market capitalization of the firm end of the year.
WC	Total current assets less total current liability scaled by total asset end of the year.
LEV	Total short-long term debt scaled by market capitalization end of the year.
CF	Cash flow from operation scaled by total asset.
PPE	Gross Property Plant, and Equipment scaled by total assets end of the year.
ROE	Return on Equity.
GROWTH	Market capitalization value of the firm divided by book value.
OP	Operating margin is annual operating income standardized by total assets.
AC	A firm adopted audit committee equal to 1, otherwise 0-.
CEO_OWN	Percentage of CEO shareholdings
GOV_OWN	Percentage of government shareholdings
LEGAL_Rights	Strength of legal rights index measures the degree to which collateral and bankruptcy laws protect the rights of borrowers and lenders and thus facilitate lending. The index ranges from 0 to 12, with higher scores indicating that these laws are better designed to expand access to credit (La porta et al. 2002)
DISC_Country	Review and approval requirement for related-party transactions, internal, immediate and periodic disclosure requirement for related-party transactions (La Porta et al. 2002).

Chapter 4

Investment Committee Characteristics and Investment Efficiency

4.1 Introduction

The investment committee (thereafter IC) is one of the most important committees of a company's board (Yoder, 2011). ICs play a key role in the deployment of $18 trillion in institutional assets in the USA (Collie, 2014). Such committees establish their firms' investment strategies and oversee critical asset allocation decisions. The expertise of IC members constitute a valuable resource that may greatly affect a firm's level of investment efficiency. Studies of investment efficiency (Collie, 2014; Ellis, 2011; Helgers, 2011) and numerous professional reports (e.g Kearney, 2014) have highlighted the importance of ICs,[56] as they are expected to provide oversight and expertise in firms' investment decision-making processes (Ellis, 2011; Kearney, 2014). However, despite the importance of ICs and their role in investment decision making, the relationship between the existence, composition, and characteristics of ICs have not been extensively examined. Hoskisson, Eden, Lau, & Wright (2000) call for further research into the role of ICs in order to better understand how they can enhance investment-related decision making in emerging markets. Hence, the objective of this study is to investigate the association between the existence of specialized ICs and the level of investment efficiency among firms listed in six Gulf Corporation Council (GCC) countries. The study also assesses how the characteristics of ICs influence investment efficiency.

A specialized IC allows its members to focus on monitoring managerial investment decisions and to provide better quality reporting on investment projects (Ellis, 2011). These responsibilities are performed more competently in firms that have ICs than in firms in which such tasks are handled by individual managers (Garmaise & Liu, 2005). IC members are expected to oversee managerial investment risks and to be actively involved in investment decision making and other related board oversight functions. Prior research (e.g Ellis, 2011; Helgers, 2011; Payne, 2009;

[56] See Wood (2006) and Ellis (2011) for detailed information on the effective role of ICs.

Yoder, 2011) provides evidence that ICs are essential in order to make prudent investment decisions and for ensuring the successful control and management of investment risks that may arise from agency conflicts or information asymmetry. As ICs are primarily responsible for improving investment decisions and for controlling risks from moral hazard and information asymmetry, we argue that firms with an IC are associated with higher-quality investment decisions than other firms. Hence, we expect that firms with an established IC have reduced under- and overinvestment effects and an overall greater level of investment efficiency. We also investigate how the characteristics of an IC, particularly its level of expertise, are related to investment efficiency. We evaluate several characteristics of IC member to ascertain how each characteristic influences firms' level of investment efficiency.

Agency conflicts and information asymmetry may give rise to both over- and underinvestment (Biddle, Hilary & Verdi, 2009). Prior research (e.g., Grabowski & Mueller, 1972; Jensen, 1986; Mueller & Peev, 2007) has posited that agency costs between managers and other shareholders arise because of managerial investment decisions that involve the pursuit of benefits for firm managers, which leads to overinvestment. This assumption is supported by Fama & Jensen (1983) and Wang & Barney (2006), who suggest that managers have a propensity to overinvest to obtain self-benefits. Furthermore, information asymmetry between managers and capital providers may affect future investment opportunities. Fund providers may lack the knowledge held by managers; this asymmetry can lead to underinvestment. Prior research also provides evidence that government regulation can increase financial constraints, thereby limiting underinvestment (Bøhren, Cooper & Priestley, 2007).

We are motivated to assess the role of the IC and its effect on investment efficiency in the GCC because it is likely that the agency and information asymmetry problems are more severe in such emerging markets (Al-Hadi, Taylor & Hossain, 2015; Al-Hadi, Hasan & Habib, 2016). GCC countries follow Western-based regulations in managing and protecting investments (Al-Hadi et al., 2015; Al-Hadi, Hasan & Habib, 2016), and all GCC countries have established equity markets. However, these markets are less sophisticated and less liquid than better developed markets (Bley & Saad, 2012). Moreover, corporate governance in the GCC is still at an early stage of development, so investor protection may be limited (Al-Shammari, Brown & Tarca, 2008; Al-Hadi, Hasan & Habib, 2016). In markets characterized by

weak market regulation and poor corporate governance, managers may be incentivized to invest in projects that benefit them at the expense of other shareholders. Such managers may thus rely on internal funding to finance negative net present value (NPV) projects. GCC countries are also likely to have entrenched underinvestment issues, as information asymmetry and transparency issues have been considered significant impediments to liquidity and trading in the GCC stock markets (Al-Hadi, Hasan & Habib, 2016; Bley, 2011; Hassan Al-Tamimi, 2012; Woertz, 2008).

This study is motivated by a growing interest in the role of ICs, investment efficiency, and the relationship between them. ICs have important governance responsibilities for ensuring the successful management of capital assets (Yoder, 2011) and are responsible for reviewing and approving the long-term investment strategies of their firms and individual investment projects (Klein, 1998). ICs have also been shown to assist with efficient asset allocation (Yoder, 2011), the effective choice of investment vehicles (Klein, 1998), making reasonable judgments concerning future market conditions (Payne, 2009), and implementing effective policies for hiring (and firing) investment managers (Helgers, 2011). We complement prior studies conducted in this area by showing that ICs assist firms with mitigating under- and overinvestment and thereby improving their level of investment efficiency.

Our research provides important evidence of the association between IC characteristics and investment efficiency in the GCC. First, we find that the existence of a standalone IC reduces both over- and underinvestment. Economically, based on the Biddle et al. (2009) multinomial logit model, the odds of under-investment and over-investment relative to the benchmark groups are 61% and 65% lower respectively with adoption of an IC. Second, we find that IC members' level of expertise in the areas of monitoring and finance affect the degree of over- and underinvestment. These results are consistent with the view that an IC provides independent monitoring and expertise with respect to a firm's investment decisions. Furthermore, the association between existence of ICs and investment efficiency is moderated by the level of foreign ownership concentration, suggesting that foreign directors transfer different professional governance practices that empower ICs leading to enhanced corporate investment efficiency.

4.2 Establishment of ICs of GCC firms

The formation of an IC is not mandatory in GCC countries based on current governance codes and regulations. Oman's new code of corporate governance encourages boards to form various subcommittees, including audit, risk, compensation and internal control committees, but is silent with respect to the formation of ICs.[57] Kuwait's code of corporate governance also suggests the establishment of a number of board subcommittees (e.g., audit, risk, compensation, internal control, and corporate governance compliance subcommittees) but does not suggest inclusion of an IC. The United Arab Emirates' governance codes do not mandate the establishment of an IC despite their request that boards form a number of subcommittees.[58] A similar mandate is found in the codes of corporate governance for Bahrain,[59] Qatar,[60] and Saudi Arabia.[61]

Prior research has examined the role of investment committees in the context of a single country (e.g. U.S.). Hence, we make an important contribution by examining the role of investment committees and their characteristics in a cross-country context by providing empirical evidence on the association between establishment of an investment committee and efficiency across six emerging GCC capital markets. This is important considering development of governance structures and supporting regulations differs across each of the GCC countries.

Despite a lack of regulatory guidance on the formation of ICs, a significant proportion of firms across all GCC countries and across different industries have established ICs. Panel C of Table 17 shows that the number of firms that have established ICs in the GCC increased from 10 in 2005 to 46 in 2013. Firms in Saudi Arabia and Oman formed 104 and 64 ICs, respectively, between 2005 and 2013. In addition, firms that have adopted ICs have established common standards concerning the duties of ICs in relation to investment decision making. For example, the *Bahrain Duty Free Corporation* stated in its 2013 annual report that its IC was established to "formulate the investment policy and guidelines subject to Board approval and review

[57] https://www.cma.gov.om/documents/En/Charter2014.pdf
[58] file:///C:/Users/Ahmed/Downloads/UAECorporateGovernanceRegime.pdf
[59] http://www.moic.gov.bh/En/Commerce/DomesticTrade/Corporate%20Governance/Documents/bb9903e050a24fc6b65190cfcd637cd1BahrainCGCodeEN.pdf
[60] http://www.ecgi.org/codes/code.php?code_id=327
[61] http://www.cma.org.sa/En/Documents/CORPORATE%20GOVERNANCE%20REGULATIONS-2011.pdf

and monitor the investment portfolio" of the firm. GASCO in Saudi Arabia also established an IC to develop its investment policies and to evaluate and maintain the risk limits for its investments. Some firms in the GCC specify ceilings for the amounts of investment to be made in terms of their countries' currencies. For instance, the Qatar-based *Al Meera Consumer Company* states in its 2012 annual report that the IC "can make investment decisions up to QAR10 million for one investment, and anything exceeding the same will be referred to the Board." Although some firms designate the general duties and responsibilities of their ICs in some detail, the Oman-based *Al-Jazeera Services Company* simply states in its 2012 annual report that the "investment committee is to review, monitor and guide the investment of the company." Clearly, recognition of the importance of ICs in enhancing their investments has led numerous GCC-based firms to voluntarily establish their own ICs.

The composition of IC membership varies considerably among GCC member countries and across industries. For instance, in Saudi Arabia, the *Al-Ahsa Development Company*'s 2009 annual report explains that the firm's IC includes 40% independent directors, while the *Filing & Packing Materials Manufacturing Company*'s 2009 annual report states that its IC includes in excess of 60% independent directors.

4.3 Theory and hypotheses development

4.3.1 ICs and investment efficiency

Studies investigating the relationship between corporate governance and investment efficiency, such as those using the Gompers G-index (such as using G-index of Gompers, Ishii, & Metrick, 2003), have been based on data from developed countries (e.g., Biddle et al., 2009; Richardson, 2006). These studies have provided mixed results (Albuquerue & Wang, 2008; Biddle et al., 2009; Billett, Garfinkel, & Jiang, 2011) and have not examined the relationships between corporate governance

structure or the particular roles or specific characteristics of board committees and firms' investment efficiency.

We argue that the voluntary creation of an IC provides evidence of board effort to ensure that the firm plans and monitors its investment portfolios effectively and efficiently (Ellis, 2011; Klein, 1998). Several studies have suggested that agency theory is a major driver of a firm's investment efficiency (Biddle et al., 2009; Billett et al., 2011; C. Chen, Young, & Zhuang, 2012; Gomariz & Ballesta, 2014). For instance, firms may over- or underinvest, which can lead to the diversion of investment resources into lower-value projects, causing a decrease in firm value (Biddle et al., 2009).

In a perfect market, firms would depend on internal funding for their investments (e.g., Modigliani & Miller, 1958) and all positive NPV projects would be self-financed (Biddle & Hilary, 2006). External funding for positive NPV projects has two main impediments: moral hazard (Fama & Jensen, 1983) and adverse selection (Myers & Majluf, 1984). These market imperfections may constrain establishment of an investment committee or may impede rigid governance practices by members of an investment committee should one exist. Information asymmetry between firm managers and outside investors can lead to these forms of market frictions if firm management possess superior information about the resources and investment capacity of a firm and use this information to opportunistically obtain outside funding, which they then could potentially over-invest (Myers & Majluf, 1984). Consequent investment distortions may allow managers to pursue an agenda whereby they obtain self-benefits at the expense of shareholders, regulators and capital providers.

Moral hazard arises when firm managers make use of the superior information they possess as compared to that available to outsiders as a means to obtain self-benefits (Jensen, 1986). Information asymmetry then makes monitoring of investments costly if this form of market friction is to be mitigated (Jensen & Meckling, 1976). Moral hazard suggests that firm management may make investments that in some way maximizes their own interests and departs from industry norms around investment efficiency (Fama & Jensen, 1983). As an example, firm management may overinvest through empire building rather than by choosing projects that maximize shareholders' welfare. Moral hazard may also lead to under-investment when firm managers do not invest in positive NPV projects when they clearly have the resources to do so as they prefer a quiet life devoid of any form of material risk.

Ellis (2011) conjectures that the central role of a specialized IC is to provide policies and procedures around investments, to monitor firms' investments and to make recommendations to managers to efficiently fund positive NPV projects. Fama and Jensen (1983) and Lan & Wang (2004) argue that moral hazard may collectively lead to both over- and under-investment which can lead to a reduction in firm value.

Adverse selection theory contends that as insiders, firm managers possess private information about the ability of their firms' investments to generate future cash flows. Managers may use this information selectively to enhance their own welfare or for example, by choosing the most appropriate time to sell stocks based on the firm's investment portfolio (Biddle et al., 2009). Managers may be inclined to overinvest if they believe it will enhance their own welfare regardless of the efficacy of the investments. However, investors and other capital market participants may recognize the propensity of a firm's managers to overinvest, which may limit the provision of capital to that firm, leading to an increase in the cost of capital (Biddle et al., 2009). Faced with a constrained ability to raise capital and a potentially higher cost of capital, the firm's managers may be forced to underinvest, even in the presence of positive NPV projects (Myers & Majluf, 1984).[62]

Both resource-based theory and agency theory appear to offer important insights into investment efficiency in the GCC (Al-Hadi, Hasan, Taylor, Hossain, & Richardson, 2016). The accounting and management literature (e.g., Barney, 1997; Cabedo & Tirado, 2004; Lee & Stone, 1997) further suggests that some firms are much more skilled in implementing governance devices and that this skill may be heterogeneously distributed across firms. Governance choices also have significant effects on the ways in which any rents created through the use of valuable and non-substitutable resources are appropriated in the GCC (Al-Hadi, Hasan & Habib, 2016). Coff (1999) suggests that the bargaining power of managers means that stakeholders are able to appropriate a disproportionate share of the rents a firm is able to generate,

[62] Previous research has demonstrated that the quality of corporate governance affects corporation information and disclosures (Kanagaretnam, Lobo, & Whalen, 2007). These disclosures, in turn, affect the levels of information asymmetry in equity markets. The market microstructure literature (Copeland & Galai, 1983; Glosten & Milgrom, 1985) suggests that a positive bid-ask spread enables the equity specialist to profit from trades with uninformed traders and thereby to offset losses incurred from trades with informed traders. Al-Hadi et al. (2015) and Al-Hadi, Hasan, and Habib (2016) show that specialized corporate governance committees, such as teams of risk managers, improve the risk reporting of firms in the GCC region, hence reducing information asymmetry and in turn the implied cost of equity capital.

and managers thus may overinvest a firm's capital (Jensen, 1986). Alternatively, such payments to managers may simply reflect compensation for the substantial firm-specific investments that these stakeholders make in a firm compared with the investments made by other stakeholders (Wang & Barney, 2006).[63]

The formation of an IC may also be understood in terms of resource-based theory, which posits that the existence and use of resources generates a competitive advantage for a firm and gives rise to heterogeneity in organizational capabilities (Rumelt, 1997). Firms with more resources may have the required capacity to form separate ICs to improve their investment opportunities and decision making (Al-Hadi, Hasan, & Habib, 2016; Pfeffer & Salancik, 1978). Resourcing can include director experience and capabilities (e.g., Lee & Stone, 1997). The combined effort of IC members can also enable the committee to oversee and monitor managerial investment risks, to be actively involved in investment decision making, and to perform related board oversight functions.

The establishment of a specialized IC allows committee members to concentrate on their firm's ability to monitor managerial investment decisions and to provide better quality reporting on investment projects (Ellis, 2011). ICs can perform these roles better than would be possible in firms that receive their information on investment projects through the reports of individual managers (Garmaise & Liu, 2005). The information content provided by a standalone specialized committee is better than that provided by a series of counterparties (Hill, 1982; Laughlin & Barth, 1981). Thus, an IC with sufficient specialized resources is primarily responsible for both improving investment decisions and controlling the hazards and risks related to information asymmetry.

We also utilize board-signaling theory which suggests that firms voluntarily create board internal committees and select its directors to signal its legitimacy and quality (Certo, 2003; Spence, 1974). Certo (2003) demonstrates that a signal such as the appointment of a prestigious member of the board is important as it allows managers to influence the perceptions of customers, suppliers, and investors. On the other hand, directors (that is independent directors) accept the board's membership to signal their talent as decision makers (Fama & Jensen, 1983). From a signaling

[63] Manigart and Beuselinck (2001) extend this conclusion to venture capital firms and, consistent with resource-based theory, find that venture capital firms with specialist skills can both add value and become better placed to control risks. This finding suggests the need for monitors with special monitoring expertise in an initial risk-management process (Al-Hadi, Hasan, & Habib, 2016).

perspective, in the presence of asymmetric information, firms voluntarily form IC and assign membership to signal firm value (Certo, 2003). When a firm voluntarily forms an additional oversight committee (e.g., IC), they disclose it in the corporate governance section of their annual reports, hence, readers are able to observe the signal. Choosing prestigious directors as members of an IC (for example, those who are qualified and independent) will make this signal costly to imitate (Certo, 2003). Stakeholders value the unobserved attributes of a voluntarily adopted committee such as an IC.

In summary, firms' choice of not establishing an investment committee may exacerbate problems around information asymmetry and agency related conflicts and costs. Inefficiencies in investment decision making, monitoring or risk taking may then arise due to the lack of controls around investment management and the increased opportunities afforded to management to act opportunistically in such an environment. Lack of governance around investments may also restrict firms' ability to raise or obtain sufficient capital to ensure that all positive NPV projects be invested in. We therefore posit that firms with a specialized IC are associated with higher-quality investment decisions and a higher level of investment efficiency than firms without specialized ICs. Thus, we hypothesize the following.

***H1a**. All else being equal, firms that establish a specialized investment committee better mitigate the risk of underinvestment.*

***H1b**. All else being equal, firms that establish a specialized investment committee better mitigate the risk of overinvestment.*

4.3.2 Experience of IC members and investment efficiency

Prior research shows that directors on board subcommittees who have financial or monitoring expertise tend to perform their investing or monitoring duties more effectively (e.g., Lee & Stone, 1997). For instance, DeZoort and Salterio (2001) argue that audit committee directors with sufficient knowledge of auditing practices make better judgments than others. Al-Hadi, Hasan, and Habib (2016) also find that qualified directors on risk committees are more likely to enhance the quality of the market risk disclosures of GCC firms.

Custódio and Metzger (2014) find that CEOs with financial experience tend to use company-wide discount rates rather than project-specific rates to evaluate investment projects. They also find that financial experts react consistently to financial shocks or events.[64] Güner, Malmendier, and Tate (2008) find that financial experts on boards have easy access to capital markets. Firms with bankers on their boards use more external financing and have lower investment-cash flow sensitivity. Ellis (2011) asserts that less qualified and less experienced directors have more difficulty achieving positive NPV projects. In addition, the agency and information asymmetry risks that are related to investment policy can be better detected by financially literate directors (Ellis, 2011). Financially literate directors on board subcommittees may perform better than other directors during periods of high uncertainty. For example, Hill (1982) suggests that complex financial issues can be overcome through an aggregation of opinions from experienced and proficient board members. Financial experts can benefit from their personal links to the financial sector. Custódio and Metzger (2014) find that a fraction of a firm's loan facilities is typically provided by former employers of the CEO. Given the roles played by directors who are financial and monitoring experts in improving their firms' investment decisions, it is reasonable to assert that the presence of expert directors on an IC can enhance a firm's investment efficiency.

Resource dependency theory suggests that qualified and financially literate directors help to obtain valuable resources (Pfeffer & Salancik, 1978). Moreover, agency theory indicates that financially qualified boards help to improve managerial monitoring (Cabedo & Tirado, 2004), thus enhancing stakeholder wealth. In support of these assertions, prior studies (e.g., Al-Hadi, Hasan, & Habib, 2016; Lee & Stone, 1997) have found that directors of board subcommittees who have relevant experience and qualifications tend to carry out their monitoring functions more efficiently. However, the GCC Board Directors Institute (BDI, 2011)[65] regards the shortage of qualified and financially skilled directors as one of the main barriers to board effectiveness. Corporate governance codes that fail to mandate ICs are another potential impediment to the appointment of suitably qualified and experienced

[64] They analyze the 2003 cuts to dividend and capital gains taxes, known as the "Bush tax cuts," and find that financial experts are more responsive as measured by increases in total payouts to shareholders.
[65] For more information, please visit [http://gccbdi.org/insights].

members to ICs. Overall, we expect that having financially literate directors on an IC helps to improve investment efficiency. Thus, we hypothesize the following.

H2a. *All else being equal, having financial experts on a specialized investment committee better mitigates the risk of underinvestment.*

H2b. *All else being equal, having financial experts on a specialized investment committee better mitigates the risk of overinvestment.*

4.4 Research design

4.4.1 Data and sample

We draw our sample from the population of non-financial firms listed in the six GCC capital markets for the 2005–2013 period. Data on ICs and corporate governance are hand-collected from annual reports, and data on the control variables are collected from Standard & Poor's (S&P) Capital IQ database.[66] As our IC variable is found in the corporate governance reports, firms lacking corporate governance sections in their annual reports are excluded from our dataset. All of the continuous disclosure variables are winsorized at the 1st and 99th percentiles to mitigate the influence of outliers. We also control for heteroscedasticity using the White test.[67]

Table 17 Panel A: Sample Selection

Total Observations

[66] We used 2005 as base year for our analysis as that 5 countries start adopting the corporate governance (voluntary & mandatory) after 2005 and 2006.

[67] The sharp drop in share prices witnessed in Muscat Stock Market (1998 Collapse). Many major and minor firms collapsed due to management dishonesty and dis-integrity, led to loss of investor confidence (Dry, 2003) and the significant improvement in advancing corporate governance systems in Saudi Arabia have been driven by some financial scandals involving Al-Gosaibi-Saad group, which is one of the listed conglomerate firms in Saudi Arabia stock market (Ramady, 2012), have compelled policy makers to push for the adoption of corporate governance standards. For example, Oman was the first country in the GCC region to issue a code of corporate governance in 2002, followed by KSA in 2006 and UAE in 2007 (Eulaiwi et al., 2016). In Oman and KSA, the Code of Corporate Governance have clearly specifies the role and responsibilities of formation specialized board committees (Investment, Risk and corporate governance committees. These include provision in term of duties, rights and obligations. Many financial and investment analysts have attributed the stock market crash and corporate scandals in the GCC to mismanagement and board monitoring inefficiencies (Koldertsova, 2011).

Number of Non-financial firms available in S & P Capital IQ for the GCC countries	167 0
Less	
Joint listed firms observation	-72
Key control variables	-467
Lead omitted observations	-142
Total Observations	989

Table 17 Panel B: Sample selection based on industry

INDUSTRY	2005	2006	2007	2008	2009	2010	2011	2012	Total	% Percent
CONSD	5	9	12	18	23	26	28	29	150	0.15
CONSS	6	13	19	23	27	29	32	36	185	0.19
ENERG	2	3	3	6	8	7	8	9	46	0.05
HEALT	0	1	2	3	4	4	6	6	26	0.03
INDUS	6	12	25	30	36	40	43	43	235	0.24
INFOR	0	0	1	1	1	2	2	3	10	0.01
MATER	9	16	22	29	32	42	47	52	249	0.25
TELEC	3	4	3	3	3	3	8	7	34	0.03
UTILI	2	4	6	8	8	8	9	9	54	0.05
Total	33	62	93	121	142	161	183	194	989	1

Table 17 Panel C: Sample distribution based on country

Country	2005	2006	2007	2008	2009	2010	2011	2012	Total	Difference*
Bahrain	0	1	1	1	3	6	9	9	30	0
Saudi Arabia	4	11	25	45	54	60	67	71	337	-32
Kuwait	0	0	1	1	5	8	10	14	39	0
Oman	27	47	54	58	63	63	65	67	444	69
Qatar	1	1	1	2	2	4	5	5	21	3
Emirates	1	2	11	14	15	20	27	28	118	-11
Total	33	62	93	121	142	161	183	194	989	

*Number of observations missing in Model 1 and Model 2.

Table 17, Panel A shows that there are initially 1,670 firm-year observations. The exclusion of joint-listed firms (72 firm-years), firms with missing control variables (467 firm-years), and observations omitted due to the use of lead values in the regression models (142 firm-years) yields a final sample of 989 firm-year observations. Panel B shows that material sector firms represent about 25% of our sample, followed by industrial firms at 24% and consumer products firms at 19%. Panel C shows that Oman (OMN) represents the highest number of observations

(44%), followed by Saudi Arabia (KSA) and the United Arab Emirates (UAE), which together represent 46% of the observations.

4.4.2 Variable measurement

4.4.2.1 Dependent variable: Proxy for investment efficiency

We investigate how the existence and characteristics of an IC in a current year affect the investment efficiency of that firm in a subsequent year. We measure investment efficiency using two models. In our first model, we use the model adopted by (Biddle et al., 2009) by first estimating a firm-specific model of investment as a function of growth opportunities (as measured by sales growth) and use the residuals as a firm-specific proxy for deviations from expected investment.[68]

$$\boldsymbol{Investment_{i,\,t+1} = \beta 0 + \beta 1\ \ Sales\ Growth_{i,t} + \ e_{i,\,t+1}} \qquad \textbf{Equation (1)}$$

where $Investment_{i,t}$ is measured as the sum of a firm's new investment in $Machinery_t$, $Equipment_t$, $Vehicles_t$, $Land_t$, and $Buildings_t$ minus *Depreciation*, $Amortization_t$, and the sales of $Net\ PPE_t$. The total investment in each year is divided by $Total\ Assets_{t-1}$ and $RevGrowth\%_{i,t-1}$ is a firm's sales growth at $year_{t-1}$ calculated as the difference between sales in $year_t$ and sales in $year_{t-1}$.

We then classify firms based on the magnitude of the residuals (i.e., deviations from predicted investment) and use these groups as the dependent variables. Specifically, we sort firms based on the residuals from Equation (1) into quartiles. Firm-year observations in the bottom quartile (i.e., the most negative residuals) are classified as underinvesting, observations in the top quartile (i.e., the most positive residuals) are classified as overinvesting, and observations in the middle two quartiles are classified as the benchmark group. We estimate a multinomial logit model that predicts the likelihood that a firm will be in one of the extreme quartiles as opposed to the middle quartiles.

In the second model, we use the (C. Chen et al., 2012) model, estimated from Biddle et al. (2009). C. Chen et al. (2012) used the average of cash and leverage to rank firms on their likelihood to over- or underinvest. Jensen (1986) and Blanchard, Lopez-de-Silanes, and Shleifer (1994) assert that firms with higher free cash balances

[68] Biddle et al. (2009) also used the book value scaled by the market value in the growth model.

are likely to overinvest their cash but that highly leveraged firms are more likely to underinvest by giving up positive NPV projects (Myers, 1977).

The investment models employed in this study have been extensively and successfully used in both a developed (e.g., U.S.) (see e.g. Biddle & Hilary, 2006; Billett et al., 2011; Cheng, Dhaliwal, & Zhang, 2013) and emerging market (e.g., GCC) (e.g. Al-Hadi, Hasan, & Habib, 2016; Bøhren et al., 2007; R. Chen, El Ghoul, Guedhami, & Wang, 2014) context.

4.4.2.2 Independent variables

This study's independent variable of interest is denoted by the existence of an IC (*IC_D*). *IC_D* is a dichotomous variable that takes a value of 1 if the firm has a dedicated IC in year *t* and 0 otherwise. To estimate the effects of IC characteristics on investment efficiency, we regress the individual IC characteristics with respect to investment efficiency. The individual IC characteristics are denoted in terms of IC experience (*IC_EXP*).[69]

The main premise underlying the governance code recommendations on board committee members is that the members must have the ability to carry out their functions effectively. Members must possess sufficient financial acumen and knowledge of the business environment to understand a firm's investment decisions. We follow a number of researchers (Badolato, Donelson, & Ege, 2014; DeZoort, Hermanson, Archambeault, & Reed, 2002; DeZoort, Hermanson, & Houston, 2003; Lee & Stone, 1997) in measuring *IC_EXP* based on the number of directors who have financial and monitoring experience. Specifically, we measure *IC_EXP* as the natural

[69] Our regression results are robust to alternative measures of IC (e.g., the proportion of independent directors on an IC). These results are not provided for brevity. We follow the various GCC codes of corporate governance in defining the independence of IC members. The GCC corporate governance codes consider several aspects of independence (e.g., the directors' prior roles in the firm, substantial relationships, remuneration, family relationships, director relationships, ownership, and long-term board tenure) in determining the degrees of director independence. For example, in Oman, Saudi Arabia, and the United Arab Emirates, independent directors should not have been employees or senior executives of the firm during the preceding two years. In Qatar, the limit is the preceding three years, and in Bahrain it is the preceding year. In terms of substantial business relationships, a director is considered independent in Bahrain if he or she does not have a financial relationship with the firm exceeding 31,000 Bahrain dinars. Corporate governance codes in all of the GCC countries restrict independent directors from having any close family ties with any of the company's advisors, directors, or employees. In Bahrain, Qatar, Saudi Arabia, and the United Arab Emirates, independent directors should not represent a significant shareholding (of more than 10%). Hence, in this study, directors are considered independent if they meet the criteria of independence stated in their country's codes of corporate governance.

logarithm of number of directors with CFO or investment or chairman or CEO experience. If an IC director has any of these experience categories, that director is scored as 1. We then sum the number of IC directors with experience in any of these categories and then take the natural log of that value (*IC_EXP*). As an example, OOMS (*Oman Oil marketing Company*) has an IC comprising four directors with 1 director with CEO experience, 0 directors with CFO experience, 1 director with investment experience, and 1 director with chairman experience in the 2009 year. The scoring of experience for each director is mutually exclusive-in other words a director is scored as 1 if it has experience in at least one of the four categories of experience, otherwise 0. We then sum the items as: 1 + 0 + 1 + 1= 3 and the natural log of that value (*IC_EXP*) is 1.0986.

4.4.2.3 Control variables

We include firm-specific control variables that influence investment efficiency. Following Biddle et al. (2009), C. Chen et al. (2012) and F. Chen, Hope, Li, and Wang (2011), we introduce several control variables in all of our models.[70] We use *SIZE* to control for firm size, measured as the natural log of total assets, and *BM* to control for firms' growth, measured as the ratio of the market value to the book value of total assets. We include total cash from operations scaled by total sales (*CFO*) to control for firm liquidity. Institutional ownership (*InstitOwn*) is measured as the percentage of firm shares held by institutional investors. *SLACK* is measured as the total cash balance divided by total assets and *LOSS* is measured as a dummy variable that takes a value of one if the net income before extraordinary items is negative and zero otherwise. We control for a firm's profitability by using return on assets (*ROA*) measured as pretax income divided by total assets. Leverage (*LEV*) is measured as total short- and long-term liabilities divided by total assets. Lang and Lundholm (1993), Biddle et al. (2009) and C. Chen et al. (2012) show that tangible assets, dividend payout ratio, and corporate governance attributes have important effects on firm-level investment efficiency. Hence, we control for a firm's property, plant, and equipment scaled by total assets (*TANG*) as a measure of tangibility. Dividend payout takes a value of one if the firm paid a dividend during a year and zero otherwise

[70] For more details about why we choose these types of control variables, please review the studies by Biddle et al. (2009), C. Chen et al. (2012), and Al-Hadi, Hasan, and Habib (2016).

(DIV). We control for strength of governance structure by including a corporate governance index *(Firm_CG)* in our models. This governance index uses the approach employed by (Al-Hadi, Hasan, & Habib, 2016).[71] Consistent with Biddle et al. (2009) and Biddle and Hilary (2006), we also include firm age (*Age*) in our models which is measured as the natural log of the number of years since incorporation.

4.4.3 Empirical model

To test H1, we use the following ordinary least squares (OLS) model:

$$Investment_{\ i,t+1,}[Under\ ]or\ [Over] = a_0 + a_1 IC\_D_{i,t} + a_2 SIZE_{i,t} + a_3 BM_{i,t} + a_4 CFO_{i,t} + a_5 InstitOwn_{i,t} + a_6 SLACK_{i,t} + a_7 LOSS_{i,t} + a_8 ROA_{i,t} + a_9 LEV_{i,t} + a_{10} TANG_{i,t} + a_{11} DIV_{i,t} + a_{12} Firm\_CG_{i,t} + a_{13} AGE_{i,t} + Year\ Industry\ Countrie\ Dummies + e_{i,t}$$

Equation (2)

Using Equation (2), we regress under- and overinvestment on *IC_D* and the control variables. Under- and overinvestment are measured using two models.

4.4.4 Empirical results and discussion

4.4.4.1 Descriptive statistics

Table 18 reports the summary statistics for the variables included in the regression models. Using Model 1, the mean (median) for the multinomial logistic regression is 2.215 (2.00), with a standard deviation of 1.117. The mean (median) values for under- and overinvestment, as determined using Model 2, are 0.848 (0.866) and 0.731 (0.745), respectively. The mean (median) IC is 0.166 (0.00), with a standard deviation of 0.372. About 16% of the non-financial firms in the GCC have an IC (*IC_D*). The mean (median) value of *IC_EXP* is 0.183 (0.00). We find that the ICs in the sample usually are comprised of four directors. We also find that the mean and median values

[71] Al-Hadi, Hasan, and Habib (2016) calculate the firm-level corporate governance index (Firm_CG) of three dichotomous items that cover the independence of the board of directors, the duality of the CEO/chairman, and the firm's directors with outside directorships.

of the control variables are consistent with the GCC literature (Al-Hadi, Hasan, & Habib, 2016; Eulaiwi et al., 2016).

Table 18: Descriptive statistics

Dependent Variables

Variable	N	Mean	S.D.	25%	Mdn	75%
Model 1	960	2.215	1.117	1.000	2.000	4.000
Model 1_ABS	960	1.77	4.30	0.17	0.46	1.33
Model 2	989	0.785	0.462	0.473	0.800	1.079
Under-Investment	455	0.848	0.468	0.514	0.866	1.146
Over-Investment	534	0.731	0.450	0.426	0.745	1.026
Independent Variables						
Variable	**N**	**Mean**	**S.D.**	**25%**	**Mdn**	**75%**
IC_D	989	0.166	0.372	0.000	0.000	0.000
IC_Exp	989	0.183	0.485	0.000	0.000	0.000
SIZE	989	5.244	1.927	3.932	5.120	6.394
BM	989	1.918	1.953	0.583	1.460	2.582
CFO	989	0.161	0.351	0.044	0.151	0.311
InstitOwn	989	0.246	0.270	0.000	0.150	0.438
SLACK	989	11.782	12.747	2.980	6.924	16.525
LOSS	989	0.068	0.251	0.000	0.000	0.000
ROA	989	5.270	5.308	2.110	4.840	8.310
LEV	989	23.677	22.618	2.914	18.848	38.053
TANG	989	2.117	4.359	0.034	0.264	1.584
TANG(mm)	989	956.25	4651.63	14.3	58.5	233.4
DIV	989	0.629	0.483	0.000	1.000	1.000
Firm_CG	989	0.638	0.246	0.333	0.667	0.667
AGE	989	2.838	0.743	2.485	2.944	3.401

4.4.5 Regression analysis

4.4.5.1 Multinomial logistic regression

We follow Biddle et al. (2009) in estimating a multinomial logistic regression using the regression residuals to test the likelihood that a firm is in the extreme investment residual quartiles as a function of IC presence. Thus, the first cohort is considered to engage in underinvestment while the fourth cohort is considered to engage in overinvestment. This specification considers the middle quartiles to be the model benchmark. In particular, we follow Biddle & Hilary (2006), Richardson (2006),

Biddle et al. (2009), and F. Chen et al. (2011) in measuring investment efficiency based on the degree to which it deviates from an expected investment level (see Equation 1).

Table 19 reports the OLS estimates on the association between the existence of an IC and investment efficiency. We test whether a firm's investment efficiency is associated with the existence of an IC using two models of investment efficiency. Table 19 shows that the coefficient of *IC_D* is negative and statistically significant for all investment efficiency estimates. These results provide support for H1. In Model 1 that deals with under-investment, we find that the coefficient of 0.9459 is negative and significant at $p<0.05$. Similarly, in Model 1 that deals with overinvestment, we find that the coefficient of 1.0502 is negative and significant $p<0.01$. Economically, with use of Model 1 that employs a multinomial logit model, the odds of under-investment and over-investment relative to the benchmark groups are 61% and 65% lower respectively with adoption of an IC.[72] In Model 2 which employs a logistic model, we find that the coefficient for both under- and over- investment are negative and significant at $p<0.01$. Economically, the odds of under-investment and over-investment using Model 2 are 24% and 12% lower respectively on adoption of an IC. Using Model 2 of investment efficiency, we can also explain the economic effect as one where we find a 0.222 million per firm-year reduction in underinvestment for firms with an IC and a 0.940 million per firm-year reduction in overinvestment for firms with an IC[73].

Several of our control variables are significantly associated with each of the models of investment efficiency including SIZE, BM, InstitOwn, LOSS, TANG, Firm_CG, and AGE. These control variables are negatively associated with both over- and underinvestment. Firm leverage and dividend payout are positively and significantly associated with both over- and underinvestment which is consistent with our expectations and the findings of prior research (Biddle et al., 2009; F. Chen et al., 2011; R. Chen et al., 2014; Xu, Xu, & Yuan, 2013). We also find that the adjusted R-squares in all models range from 31% to 61%.

[72] Calculated as the exponential of the regression coefficients -0.9459 and -1.052 minus 1 in both cases. For an interpretation of logistic regression coefficients, see Taplin (2016).

[73] The economic effect is calculated as the mean value of under (over) investment 0.848 (0.731) x mean of PPE $ 956.25 million x IC coefficient-0.2746(-0.1350). This is equal to .222 (0.94) million per firm-year.

In summary, our regression results are consistent with the argument that the existence of an IC reduces information asymmetry and limits managerial opportunistic behavior related to participation in value-destroying investments. In particular, ICs appear to align firms' investment activities with best practice policies and the monitoring of firms' investments. Specifically, ICs' are likely to provide expert advice regarding which investments firms' should pursue and will monitor the quantum and types of investments of those firms. The results reflect that the existence of an IC is likely to reduce the likelihood of both under- and overinvestment.

Table 19: Association between ICs and Investment Efficiency

	Model 1		**Model 2**	
	Under-Investment	Over-Investment	Under-Investment	Over-Investment
IC_D	**-0.9459**	**-1.0502**	**-0.2746**	**-0.1350**
	(-2.03)**	**(-2.93)*****	**(-3.77)*****	**(-3.04)*****
SIZE	-1.0475	1.1945	0.0235	0.0281
	(-5.74)***	(6.85)***	(0.87)	(1.40)
BM	-0.1549	0.0233	0.0025	-0.0145
	(-1.39)	(0.25)	(0.23)	(-1.35)
CFO	0.3078	0.1707	0.1933	0.2451
	(0.66)	(0.37)	(2.90)***	(2.92)***
InstitOwn	-1.1954	-0.4298	0.2971	0.0039
	(-1.41)	(-0.94)	(3.75)***	(0.05)
SLACK	0.0153	0.0208	-0.0048	-0.0079
	(1.06)	(1.70)*	(-2.60)***	(-5.71)***
LOSS	-0.3400	0.8431	0.0146	0.2635
	(-0.34)	(1.60)	(0.14)	(2.31)**
ROA	0.0394	0.0604	-0.0183	0.0074
	(0.93)	(1.57)	(-3.35)***	(1.46)
LEV	0.0318	0.0226	-0.0029	-0.0003
	(3.54)***	(2.86)***	(-2.34)**	(-0.19)
TANG	-0.1845	0.1004	0.0379	0.0156
	(-3.38)***	(1.56)	(5.25)***	(1.46)
DIV	0.7691	0.4667	0.0914	0.1465
	(1.89)*	(1.75)*	(2.04)**	(3.31)***
Firm_CG	-0.2773	-0.1647	0.1411	-0.0878
	(-0.36)	(-0.29)	(1.56)	(-1.16)
AGE	-0.2184	-0.2352	-0.0018	0.0010
	(-0.76)	(-1.40)	(-0.04)	(0.04)
Intercept	-0.1226	-7.6604	0.3806	0.6163
	(-0.06)	(-5.38)***	(1.92)*	(3.46)***
YEAR	YES	YES	YES	YES
IND	YES	YES	YES	YES
COUNTRY	YES	YES	YES	YES

N	960	455	534
Adj-R	0.612	0.310	0.339

4.4.5.2 IC characteristics and investment efficiency

We then examine the association between IC experience (*IC_EXP*) and firm investment efficiency. The results are provided in Table 20. The coefficients of the association between *IC_ EXP* and under- and overinvestment are negative and statistically significant at p<0.01. Similarly, in Model 1 that deals with overinvestment, we find that the coefficient of 0.6403 is negative and significant at p<0.01. Economically, the odds of under-investment and over-investment relative to the benchmark groups using Model 1 are 71% and 47% lower respectively with existence of an experienced member in the investment committee (*IC_EXP*). In Model 2, we also find both the coefficient for under and over-investment are negative and significant at p<0.01. Economically, the odds of under-investment and over-investment using Model 2 are 22% and 10% lower respectively with the existence of an experienced member on the investment committee (*IC_EXP*). Alternatively, the regression coefficients in Model 2 indicate that a 0.201 million per firm-year reduction in underinvestment for the firm with *IC_ EXP* and a 0.71 million per firm-year reduction in overinvestment for the firm with *IC_ EXP* at p< 0.05 or better. These results provide support for Hypotheses 2a and 2b and are consistent with the findings of Biddle et al. (2009) and Cheng et al. (2013). The presence of more expert and qualified directors on an IC reduces managerial opportunistic behavior relating to firms' investments.

We also disaggregate *IC_EXP* into its four components: *a*) the natural logarithm of the number of directors in the IC with CFO experience; *b*) the natural logarithm of the number of directors with investment experience; *c*) the natural logarithm of the number of directors in the IC with experience as a chairperson; and *d*) the natural logarithm of the number of directors with experience as a CEO. We incorporate each of these four governance items in Models 1 and 2. In both models, we find results (untabulated for the sake of brevity) that are consistent with our main model results in that each of these IC governance items reduces under- and overinvestment at $p < 0.10$ or better.

We also assess whether other characteristics of ICs, such as membership with CPA, CFA, CIM, ACCA, IC size (*IC_Size*) and the frequency of IC meetings per year, affect investment efficiency. Untabulated results provide evidence that each of these additional IC characteristics reduces a firm's levels of under- and overinvestment. For example, for IC size, we find[74] negative coefficients for Model 1, with over- and underinvestment coefficients being 0.612 and 0.792, respectively. The coefficients for Model 2 for over- and underinvestment are 0.0886 and 0.2582, respectively. All of these coefficient figures are significant at $p<0.01$.[75] Untabulated results also show consistent effects for IC member qualification. For instance, the coefficient values from Model 1 for over- and underinvestment are 0.2531 and 2.7939, respectively, and those for Model 2 are 0.2146 and 0.2927, respectively. This pattern of results suggests that higher numbers of qualified directors on an IC provide better monitoring with flow-on implications in terms of protecting firms' investments and ultimately shareholders' wealth.

Table 20: Association between ICs Experience and Investment Efficiency

	Model 1		**Model 2**	
	Under-Investment	Over-Investment	Under-Investment	Over-Investment
IC_EXP	**-1.2561**	**-0.6403**	**-0.2482**	**-0.1021**
	(-3.62)***	**(-2.72)*****	**(-3.72)*****	**(-3.26)*****
SIZE	-1.1478	1.1728	0.02	0.0235
	(-5.83)***	(6.98)***	-0.74	-1.17
BM	-0.1626	0.0362	0.0019	-0.015
	(-1.46)	-0.39	-0.17	(-1.42)
CFO	0.1353	0.0843	0.1805	0.2417
	-0.26	-0.19	(2.70)***	(2.84)***
InstitOwn	-1.638	-0.4775	0.2428	0.0076
	(-1.87)*	(-1.04)	(3.00)***	-0.1
SLACK	0.0231	0.0221	-0.0039	-0.0079
	(1.67)*	(1.85)*	(-1.85)*	(-5.70)***
LOSS	-0.5001	0.8306	0.0064	0.2679
	(-0.45)	-1.6	-0.06	(2.37)**
ROA	0.0518	0.0644	-0.0182	0.0085
	-1.19	(1.70)*	(-3.22)***	(1.68)*

[74] Results are not provided for brevity.

[75] We also run a dummy variable for the number of directors on an IC and find that the results are convex. From one to five directors, our results are consistent, with negative and significant coefficients. With six to seven directors, the coefficients are not significant, and with eight or more directors, the underinvestment coefficient becomes positive. These results confirm the findings of the literature on optimal committee sizes (Petra & Dorata, 2008; Sun & Cahan, 2009; Yermak, 1996).

LEV	0.0327	0.0235	-0.0031	0
	(3.54)***	(2.99)***	(-2.52)**	-0.01
TANG	-0.2156	0.0979	0.0349	0.0153
	(-3.75)***	-1.52	(4.83)***	-1.43
DIV	0.7009	0.498	0.0852	0.1476
	(1.71)*	(1.89)*	(1.91)*	(3.33)***
Firm_CG	-0.637	-0.1703	0.096	-0.1087
	(-0.81)	(-0.30)	-1.06	(-1.44)
AGE	-0.2498	-0.2892	-0.0155	0.0003
	(-0.82)	(-1.72)*	(-0.34)	-0.01
Intercept	0.9127	-7.5026	0.4859	0.6583
	-0.45	(-5.33)***	(2.40)**	(3.66)***
YEAR	YES	YES	YES	YES
IND	YES	YES	YES	YES
COUNTRY	YES	YES	YES	YES
N	960		455	534
Adj-R	0.614		0.309	0.341

4.4.6 Additional analysis

4.4.6.1 Effects of foreign ownership on investment efficiency

ICs help to establish firms' investment policies and objectives (Ellis, 2011). Governance around firm investment strategies is affected by foreign ownership, as foreign owners are likely to ensure that practices are consistent with international norms and standards (Aggarwal, Erel, Ferreira, & Matos, 2011). Aggarwal et al. (2011) find that foreign investors are more likely to insist on higher standards of governance and protection of minority rights. Foreign investors also contribute to strategic decision making and assist in monitoring and disciplining management (e.g., G. Chen, Firth, Gao, & Rui, 2006; Desender, Aguilera, Lópezpuertas-Lamy, & Crespi, 2014). Accordingly, foreign ownership in a firm can give investors the opportunity to monitor firms' investment processes (Ellis, 2011; Hayes, Mehran, & Schaefer, 2004).

Consistent with our expectations, regression results reported in Table 21 show that the existence of an IC significantly (at $p < 0.01$) reduces both under- and overinvestment when controlling for foreign ownership. These results also suggest that the effect of an IC in suppressing under- and overinvestment is more pronounced in firms with high foreign ownership concentrations (Desender et al., 2014). Foreign

ownership appears to assist in monitoring boards and their committee activities, alleviating issues concerning moral hazard or adverse selection that can lead to investment inefficiency (Jensen, 1986; Jensen & Meckling, 1976). An IC can thus mitigate the risk of under- and overinvestment by firms with high foreign ownership concentrations compared with firms with lower levels of foreign ownership concentration (Desender et al., 2014).

Table 21: Moderation effect of Foreign Ownership on the relation of IC_D and Investment Efficiency

	Model 1		**Mode 2**	
	Under-Investment	Over-Investment	Under-Investment	Over-Investment
IC_D	**-0.9237**	**-0.9857**	**-0.2364**	**-0.1291**
	(-1.94)*	**(-2.77)*****	**(-3.23)*****	**(-2.70)*****
ForOwn	**-0.0018**	**-0.2697**	**0.1792**	**0.0001**
	(-0.16)	**(-0.80)**	**-1.09**	**0.001**
IC_D * ForOwn	**-2.11**	**-3.9752**	**-0.8979**	**-4.3221**
	(-9.09)***	**(-12.57)*****	**(-3.53)*****	**(-2.25)****
SIZE	-1.05	1.1913	0.0176	0.0182
	(-5.76)***	(7.09)***	-0.65	-0.82
BM	-0.1504	0.0567	0.0009	-0.0146
	(-1.21)	-0.59	-0.08	(-1.19)
CFO	0.2922	0.1558	0.1848	0.2929
	-0.62	-0.34	(2.73)***	(2.07)**
InstitOwn	-1.1992	-0.4029	0.328	-0.0108
	(-1.40)	(-0.89)	(4.00)***	(-0.13)
SLACK	0.0173	0.0235	-0.003	-0.0077
	-1.15	(1.90)*	(-1.39)	(-5.18)***
LOSS	-0.3803	0.7547	0.0122	0.3264
	(-0.39)	-1.46	-0.12	(1.85)*
ROA	0.0371	0.0557	-0.0184	0.0052
	-0.86	-1.49	(-3.26)***	-0.88
LEV	0.0324	0.0235	-0.0028	0.0002
	(3.57)***	(2.98)***	(-2.36)**	-0.1
TANG	-0.1853	0.0905	0.0355	0.0095
	(-3.33)***	-1.3	(4.88)***	-0.79
DIV	0.7723	0.4725	0.0943	0.1352
	(1.90)*	(1.79)*	(2.11)**	(2.88)***
Firm_CG	-0.3235	-0.2465	0.1301	-0.1435
	(-0.42)	(-0.42)	-1.42	(-1.69)*
AGE	-0.2198	-0.2623	-0.0029	-0.0031
	(-0.75)	(-1.55)	(-0.07)	(-0.12)
Intercept	0.0862	-7.1726	0.4293	0.795
	-0.04	(-4.80)***	(2.17)**	(3.70)***
YEAR	YES	YES	YES	YES
IND	YES	YES	YES	YES

COUNTRY	YES	YES	YES	YES
N	960		455	534
Adj-R	0.615		0.317	0.302

4.4.7 Sensitivity analysis

4.4.7.1 Propensity score matching

Consistent with prior research (e.g., Armstrong, Blouin, & Larcker, 2012; Lennox, Lisowsky, & Pittman, 2013), we also use the propensity score matching (PSM) procedure as an additional endogeneity check of our baseline regression results (see Table 22). The PSM procedure comprises a logistic regression model with a set of firm characteristics from prior studies (e.g., Hines & Peters, 2015). We include board size (natural log of board size), leverage (total debt scaled by total assets), CEO tenure (natural log of number of years as a CEO), audit quality (which has a value of one if a firm is audited by at least one of the Big 4 and zero otherwise), and duality (if the firm's CEO and chairman positions are combined) as independent variables in our logistic regression model.[76] Importantly, the use of these variables ensures a proper balance between the treated and untreated subjects in the matched sample, which is one of the key elements of PSM (Austin, 2011).

One important aspect of propensity score matching is to examine the distribution of measured baseline covariates between treated and untreated subjects within the propensity score matched sample. If, after conditioning on the propensity score, no systematic differences exist in the baseline covariates between treated and untreated subjects, the propensity score model has not been correctly specified (Austin, 2011). In Table 22, Panel A, none of the included covariates are significantly different between IC versus non-IC sub-samples, providing strong support for our estimation.

We also use our main independent dummy variable, IC (coded as one if firms have adopted IC and zero otherwise), as the dependent variable in the logistic regression model to calculate the propensity scores. Using the predicted propensity

[76] These variables are defined in Appendix IV.

scores from this logistic regression, we then match the observations in the treatment subjects (firm-year observations with IC equal to one) to the control subjects (firm-year observations with IC equal to zero). We then combine the matched pairs into pooled samples (see Table 22) and perform our OLS regression analysis.

The regression results for the PSM procedure are presented in Table 22. We find that the regression coefficient for IC is negatively and significantly associated with both under- and overinvestment across all regression model specifications ($p <$ 0.1 and better), so H1 is again supported by the empirical results. Finally, we find that the regression coefficients for almost all of the variables are statistically significant (p < 0.10 or better with predicted signs) in some of our regression models.[77]

Table 22: Panel A: T-test for first stage Logit Model- Propensity Match Scoring (PSM).

	Means test			
	IC_D	IC_D	Difference	t-value
Board Size	7.8149	7.922	-0.1071	-0.889
Leverage	.27956	.1624	0.11716	1.0569
CEO Tenure	3.0937	3.223	-0.1293	-0.9514
Audit Q	.6955	.6525	0.043	1.3723
Duality	.0554	.06425	-0.00885	-0.5474

Table 22 Panel B: Association between ICs and Investment Efficiency using PSM based on Nearest Neighbor

	Model 1		**Model 2**	
	Under-Investment	Over-Investment	Under-Investment	Over-Investment
IC_D	**-0.8764**	**-1.0011**	**-0.1411**	**-0.1422**
	(-2.53)**	**(-2.11)****	**(-1.60)**	**(-2.62)*****
SIZE	1.2092	-1.0600	0.0640	0.0317
	(6.83)***	(-5.64)***	(2.05)**	(1.27)
BM	0.0471	-0.1695	0.0291	-0.0075
	(0.50)	(-1.49)	(1.72)*	(-0.63)
CFO	0.0734	0.0750	0.2529	0.2008
	(0.16)	(0.14)	(3.47)***	(2.23)**
InstitOwn	-0.1852	-0.7241	0.3666	-0.0853
	(-0.38)	(-0.85)	(4.24)***	(-1.08)

[77] We follow prior research (e.g., Austin, 2011; Heckman, Ichimura, & Todd, 1997) and rely on the nearest-neighbor approach (with replacement) to perform the matching process. This approach specifically matches a single control firm according to the closest propensity score (Austin, 2011; Heckman et al., 1997). In untabulated results, we also use the kernel and radius (at the 1% level) matching methods, which provide qualitatively similar results.

SLACK	0.0224	0.0143	-0.0056	-0.0077
	(1.78)*	(1.01)	(-1.97)**	(-4.66)***
LOSS	0.8069	-0.4051	0.1172	0.1573
	(1.45)	(-0.42)	(1.10)	(1.36)
ROA	0.0543	0.0481	-0.0203	0.0037
	(1.39)	(1.09)	(-3.19)***	(0.63)
LEV	0.0247	0.0332	-0.0055	0.0003
	(3.16)***	(3.59)***	(-4.28)***	(0.12)
TANG	0.1060	-0.1912	0.0524	0.0227
	(1.62)	(-3.37)***	(5.91)***	(1.21)
DIV	0.4876	0.7293	0.0415	0.1178
	(1.77)*	(1.85)*	(0.81)	(2.27)**
Firm_CG	-0.4423	-0.6306	0.1299	-0.1493
	(-0.74)	(-0.79)	(1.26)	(-1.85)*
AGE	0.1556	0.0476	0.0609	0.0409
	(0.63)	(0.14)	(1.37)	(1.04)
Intercept	-1.4294	-9.0623	0.1615	0.2465
	(-0.63)	(-5.30)***	(0.65)	(1.20)
YEAR	YES	YES	YES	YES
IND	YES	YES	YES	YES
COUNTRY	YES	YES	YES	YES
N	920		319	374
Adj-R	0.608		0.403	0.360

4.4.7.2 Blundel–Bond general methods of moments (GMM) regression analysis

As another endogeneity check of our baseline regression results reported in Table 23, we use the Blundell–Bond general methods of moments (GMM) regression analysis to more accurately control for potential time-invariant correlated omitted variables in our study (Kubick & Masli, 2016; Wintoki, Linck, & Netter, 2012). To estimate the system GMM, we treat the lagged dependent variable and the under- and overinvestment as endogenous variables. The results of the Blundell–Bond GMM regression analysis are reported in Table 23.

Table 23 shows that the regression coefficient for IC is negatively and significantly associated with the under- and overinvestment proxies across all of the regression model specifications (p<0.1 and better). Hence, these particular sets of results provide additional support for H1. We also observe that some of the regression coefficients for the control variables are significantly associated with under- and overinvestment in our regression models, including *SIZE, CFO, IO, SLACK, LOSS, ROA, LEV, TANG, DIV*, and *Firm_CG* (p < 0.10 or better with predicted signs). We conduct several post-estimation tests, as shown in Table 23, and the results indicate

that the measures of autocorrelations (1) and (2) confirm the existence of first-order but not second-order autocorrelations. The Hansen test confirms that the relations are not endogenous and that the instruments used are valid.

Table 23: Association between ICs and Investment Efficiency using (GMM)

	Model 1		**Model 2**	
	Under-Investment	Over-Investment	Under-Investment	Over-Investment
L. Investment	**-0.4968**	**-0.328**	**-0.1849**	**-0.0536**
	(-2.83)* **	**(-2.50)** **	**(-2.52)** **	**(-1.80)***
IC_D	**-0.4176**	**-0.2881**	**-0.5026**	**-0.1478**
	(-2.25) **	**(-1.82)***	**(-4.54)*** **	**(-2.21)** **
SIZE	0.2169	0.161	-0.0285	0.03
	(2.85)***	(2.52)**	(-0.67)	-1.56
BM	-0.0102	-0.0021	0.008	-0.0066
	(-0.36)	(-0.08)	-0.87	(-0.77)
CFO	0.3793	0.3533	0.1736	0.1587
	(2.94)***	(2.87)***	(4.01)***	(4.40)***
InstitOwn	0.1077	0.0779	0.458	0.0486
	-0.79	-0.63	(4.59)***	-0.57
SLACK	-0.0055	-0.004	-0.0029	-0.0074
	(-0.89)	(-0.79)	(-1.54)	(-7.41)***
LOSS	0.2877	0.3768	0.0628	0.1151
	(1.75)*	(2.60)***	-1.07	-1.63
ROA	-0.0163	-0.011	-0.0179	0.0074
	(-1.15)	(-0.88)	(-3.19)***	(1.78)*
LEV	-0.0028	-0.0017	-0.0016	0.0007
	(-0.66)	(-0.49)	(-1.11)	-0.45
TANG	0.1176	0.0561	0.0414	0.0161
	-1.11	-0.64	(4.05)***	(3.71)***
DIV	-0.012	0.0122	0.0764	0.0695
	(-0.14)	-0.15	(2.35)**	(2.62)***
Firm_CG	-0.2606	-0.0194	0.1663	-0.1651
	(-1.04)	(-0.08)	(1.90)*	(-2.96)***
AGE	-0.0543	-0.0296	0.0532	0.0298
	(-1.08)	(-0.72)	-0.75	-1.2
YEAR	YES	YES	YES	YES
IND	YES	YES	YES	YES
COUNTRY	YES	YES	YES	YES
Arellano-Bond test for AR(1)	0.016	0.103	0.034	0.095
Arellano-Bond test for AR(2)	0.298	0.424	0.125	0.375

Hansen test of overid. restrictions:	0.152	0.106	0.37	0.097

System GMM regressions of investment efficiency, over- and under-investment on the IC_D. All variables are measured as defined in APPENDIX IV . w use lags ** to ** of the changes in investment efficiency, and lags *** and *** of the changes in the IC_D. AR(1) and AR(2) are tests for the first and second order autocorrelations under the null of no autocorrelation. The 'Hansen test ' is a test of the validity of the instruments used under the null that the instruments used are exogenous and valid. All functions include eyear, industry and country dummies. t-statistics are reported in parentheses next to each coefficient.

4.4.7.3 Fama–MacBeth (1973) two-step procedure

Another robustness check of our baseline regression results (see Table 19) considers the issue of serial dependence in our data, as IC and under- and overinvestment may remain fairly constant over the 2005–2013 period. We estimate our regression model in Equation (2) using the Fama and MacBeth (1973) two-step procedure. In particular, we drop the year dummy variables from our regression model and estimate the revised regression model by year and then test the statistical significance of the averaged coefficients using a *t*-test.[78]

Untabulated regression results for the Fama and MacBeth (1973) estimation method show that the regression coefficient for IC is negatively and significantly associated with under- and overinvestment across all regression model specifications (p<0.01), so H1 is again supported by the empirical results. Finally, we observe that the regression coefficients for most of the control variables are statistically significant (p<0.10 or better with predicted signs) in a number of our regression models.

4.4.7.4 Instrumental variables (2SLS) regression analysis

Our baseline regression results (see Table 19) may be affected by endogeneity (i.e., simultaneity and/or reverse causality), leading to biased regression coefficient estimates. Thus, as our first robustness check, we perform an instrumental variable (2SLS) regression analysis (e.g., Larcker & Rusticus, 2010; Wooldridge, 2010). In the first-stage regression model, we include two instrumental variables (IVs) to capture IC formation: mean ICs based on the country, industry, and size of the board's executive committee. In accordance with prior research (e.g., Al-Hadi, Hasan, Taylor,

[78] As Fama and French (2001), we estimate the regression models year by year and report the average coefficients for the independent and control variables. The t-statistics are computed based on the time-series standard deviations of the regression coefficients.

et al., 2016; Hasan, Hossain, & Habib, 2015; Jha & Cox, 2015), country and industry are likely to be determinants of whether firms adopt an IC, while firms that establish board executive committees are less likely to adopt ICs. Executive committees are usually formed to control and monitor a firm's investment process and decisions and are typically involved in the firm's daily operations (Aurell, 1964; Sherman, Kashlak, & Joshi, 1998). Thus, we expect a negative association between the size of the executive committee and ICs.

The first-stage regression model used to predict investment committee use is estimated as follows:

$$IC\_D_{it} = \alpha_{0it} + \beta_1 ICCIMean_{it} + \beta_2 ExCom\_Size_{it} + \beta_{3\text{-}11} CONTROLS + \beta_{12\text{-}21} IND_{it} + \beta_{22\text{-}30} YEAR_{it} + \beta_{30\text{-}36} Country_{it} + \varepsilon_{it}$$

Equation (3)

where *ICCIMean* is the mean value of the ICs in each country and industry, *ExCom_Size* is the natural log of the number of directors on the executive committee, and *CONTROLS* is a vector of the control variables from Equation (2).

Consistent with our expectations, the results of the first-stage regression model reported in Table 24 (Panel A) show that the regression coefficients for *ICCIMean* and IC are positively and significantly associated ($p < 0.01$) and that those between *ExCom_Size* and IC are negative and insignificant. We also test the suitability of our IVs by computing several post-estimation tests (see Table 24, Panel B). First, we compute the under-identification test. We find that the Anderson LM statistic is significant ($p < 0.01$) in all of the regression model specifications (Models 1 and 2), so our IVs (*ICCIMean* and *ExCom_Size*) are relevant. Second, we calculate the weak identification test and observe that the Cragg–Donald Wald *F* statistic for each regression model specification (Models 1 and 2) is above the (Stock & Yogo, 2002) critical value of 19.93 (based on a 10% maximal IV size), so weak IVs are not a concern for our regression estimates. Third, we compute the over-identification test and find that the Sargan statistic is not significant, which indicates that our IVs are not over-identified and are thus satisfactory. Finally, we conduct the (Hausman, 1978) test for endogeneity and find that it generally rejects the exogeneity of the IVs ($p < 0.10$ or less with the exception of overinvestment in Model 2), indicating that the 2SLS regression estimates are essentially preferable to the OLS regression estimates. Overall, we conclude that *ICCIMean* and *ExCom_Size* are plausible IVs that enhance the validity of the inferences in the second-stage regression specifications.

For the second-stage regression model reported in Table 24 (Panel C), we find that the regression coefficient for ICs is negatively and significantly associated with investment efficiency across all of the regression model specifications ($p < 0.05$ or better), so H1 is again supported by our empirical results. Finally, we observe that the regression coefficients for most of the control variables are statistically significant ($p < 0.10$ or better with predicted signs) in a number of our regression models.

Table 24: Association between ICs and Investment Efficiency using 2SLS.

Panel A: First-stage regression model

Variables	Pred. sign	Model 1		Model 2	
		Under-Investment	Over-Investment	Under-Investment	Over-Investment
Intercept	?	-0.0999	-3.2660***	0.4518	0.4785**
		(-0.20)	(-5.32)	(1.03)	(2.33)
ICCIMean	+	.7077***	.92633***	1.3109***	2.4075***
		(3.37)	(3.90)	(6.50)	(2.94)
ExCom_Size	-	-	-	-.0575	.129011
		-	-	(-0.57)	(1.00)
CONTROLS	?	Yes	Yes	Yes	Yes
IND	?	Yes	Yes	Yes	Yes
YEAR		Yes	Yes	Yes	Yes
COUNTRY	?	Yes	Yes	Yes	Yes
Panel B: Post-estimation tests		**Model 1**		**Model 2**	
Description		Under-Investment	Over-Investment	Under-Investment	Over-Investment
1.Under-identification test					
Anderson LM statistic		-	-	38.54	42.498
p-value		-	-	0	0.000
2. Weak identification test					
Cragg-Donald Wald F statistic		-	-	19.443	21.601
Stock-Yogo (2005) critical value		-	-	19.93	19.93
Wald-p-value (ivprobit)		0.0008	0.0447		
3.Over-					

identification test				
Sargan statistic [Amemiya-Lee-Newey]	4.03	0.000	0.74	0.059
Chi-square *p*-value	[0.1184]	[0.2020]	0.3897	0.8088
4. Hausman (1978) test				
Hausman statistic	-	-	26.458	1.214
Chi-square *p*-value	-	-	0.000	0.2705
Wald-test for ivprobit	17.88	2.99	-	-
Prob > chi2	(0.000)	(0.0880)	-	-

Panel C: Second-stage regression model

Variables	Pred. sign	Under-Investment	Over-Investment	Under-Investment	Over-Investment
IC_D	+	-2.5716***	-1.5149***	**-1.4908*** **	**-0.2897** **
		(-3.36)	(-3.72)	**(-4.87)**	**(-1.99)**
SIZE	–	-0.1221*	0.3542***	-0.0325	0.0175
		(-1.76)	(9.72)	(-0.91)	(0.89)
BM	+	-0.1275**	0.0029	-0.0022	-0.0095
		(-2.13)	(0.10)	(-0.16)	(-0.77)
CFO	+	0.2289	-0.2803*	0.2119***	0.2972***
		(1.00)	(-1.82)	(3.05)	(4.16)
InstitOwn	+	-0.7349**	0.1108	0.2422**	-0.0269
		(-2.09)	(0.57)	(2.48)	(-0.34)
SLACK	+	0.0101	0.0086*	0.0085**	-0.0073***
		(1.33)	(1.82)	(2.08)	(-4.78)
LOSS	–	-0.4639	-0.1447	-0.0844	0.1742*
		(-1.19)	(-0.58)	(-0.76)	(1.71)
ROA	+	0.0066	-0.0016	-0.0318***	0.0042
		(0.31)	(-0.11)	(-4.21)	(0.92)
LEV	+	-0.0104**	-0.0044	-0.0041***	0.0012
		(-2.04)	(-1.52)	(-2.85)	(0.73)
TANG	+	-0.0285	-0.0155	0.0259***	0.0145**
		(-1.20)	(-0.64)	(3.19)	(2.00)
DIV	+	1.4755***	0.2655	0.0543	0.1319***
		(3.09)	(0.89)	(0.93)	(3.14)
Firm_CG	?	-0.1506	-0.3192*	0.1425	-0.1029
	?	(-0.40)	(-1.68)	(1.17)	(-1.28)
AGE		-0.3521**	-0.0523	0.0853	0.0589*
		(-2.10)	(-0.88)	(1.57)	(1.91)

Intercept	1.8949**	-2.3177***	0.4518	0.4785**
	(2.05)	(-6.20)	(1.03)	(2.33)

4.4.7.5 Alternative models of investment efficiency

To mitigate possible concerns over measurement error, we use two other models for the investment efficiency shown in Table 25. In Model 3, we follow Eisdorfer, Giaccotto, and White (2013) and categorize firms into an underinvestment group if their investment is lower than the median industry investment in year *t* and into an overinvestment group if their investment is higher than the median industry investment in year *t*. *Under-Invest_D* is equal to one if the firm underinvests and zero otherwise, while *Over-Invest_D* is equal to one if the firm overinvests and zero otherwise.[79] Second, we follow a model adopted by (Al-Hadi, Hasan, Taylor, et al., 2016) that uses the absolute value of the residual model of (Biddle et al., 2009) in Equation (1). The results in Table 25 show consistent evidence that ICs reduce both under- and overinvestment by firms, which is consistent with our results in Table 19.

Table 25: Alternative measures of investment efficiency

	Model 3		**Model 4**
	Under-Investment	Over-Investment	Absolute
IC_D	**-0.0957**	**-0.0864**	**-0.6296**
	(-2.13)**	**(-2.00)****	**(-3.39)*****
SIZE	0.0341	0.0000	1.4552
	(1.90)*	(0.00)	(6.12)***
BM	-0.0029	0.0018	-0.0891
	(-0.29)	(0.20)	(-2.00)**
CFO	-0.0547	0.2600	0.3792
	(-0.97)	(4.29)***	(1.30)
InstitOwn	-0.0459	0.1143	-0.4335
	(-0.56)	(1.97)**	(-1.29)
SLACK	-0.0041	-0.0066	0.0179
	(-3.06)***	(-4.97)***	(2.02)**
LOSS	0.0210	0.2175	0.0633
	(0.21)	(2.40)**	(0.15)
ROA	0.0009	-0.0036	-0.0730
	(0.19)	(-0.84)	(-2.99)***

[79] We follow the procedure from a study by (Eisdorfer et al., 2013) to determine whether firms' investment levels deviate from their industry medians in a given year. Firms are considered to overinvest if their investment levels are higher than their industry median values and to underinvest if their investment levels are lower than their industry median values.

LEV	-0.0019	-0.0030	-0.0143
	(-1.19)	(-3.51)***	(-2.22)**
TANG	0.0102	0.0262	0.2526
	(1.17)	(4.84)***	(5.60)***
DIV	0.0160	0.0869	-0.0657
	(0.40)	(2.31)**	(-0.30)
Firm_CG	-0.1450	0.0701	-0.4542
	(-1.77)*	(1.05)	(-1.26)
AGE	-0.0716	0.0517	-0.0818
	(-2.56)**	(2.33)**	(-0.52)
Intercept	0.5364	0.6270	-5.4897
	(3.05)***	(3.76)***	(-3.82)***
YEAR	YES	YES	YES
IND	YES	YES	YES
COUNTRY	YES	YES	YES
N	351	624	960
Adj-R	0.258	0.339	0.509

4.4.7.6 Additional analysis

Although we conduct several tests to show that our results are not generated based on inconsistent or bias estimators or endogeneity, there is a potential endogeneity problem in our use of the independent variables. For instance, we use *CFO, SLACK, TANG*, and *LEV* to calculate the investment efficiency, and *CFO* may also affect the cash balance in the firms' *SLACK*. We repeat our main analysis (Table 19) without these four variables, and un-tabulated results show that our results are consistent with our H1.[80]

Finally, we also observe that our sample is concentrated on firms in Oman and Saudi Arabia (KSA). This can create sample bias. Although we explain in section 2.1 how corporate governance characteristics differ among the GCC counties, we empirically repeat our main regression analysis by separating our sample into two groups: the first sample (sample 1) comprises only Oman and KSA firms while the second sample (sample 2) comprises firm sonly from the remaining countries (UAE, Kuwait, Qatar and Bahrain). In both samples, we provide consistent results that demonstrate that an IC reduces both under-over investment. For instance, un-tabulated results using Model 1 show that an IC of KSA and Oman firms (sample 1) reduces under (over)- investment by 0.9334 (0.9697) relative to the benchmark groups, significant at $p<0.05$. Using sample 2, the presence of an IC reduces under (over)-

[80] The results are not included for brevity.

investment by 1.1384 (0.9613) relative to the benchmark groups, significant at $p<0.1$ or better, using Model 1.

4.5 Conclusions

We find that the existence of an IC reduces information asymmetry and suppresses the risk of managerial opportunistic behavior that may lead to value-destroying investment decisions. We add to the literature on investment management and corporate governance by examining how IC characteristics affect investment efficiency among GCC-based firms. We show that the financial experience of IC members significantly reduces over- and underinvestment.

The GCC countries provide an ideal setting in which to examine the role of ICs and their effects on investment efficiency, as it is likely that agency and information asymmetry problems are entrenched in these countries. In particular, the GCC countries have experienced the rapid development of corporate governance codes, regulations, capital markets, and international trade over the past 15 years, which has affected the establishment and reliance on specialized committees such as ICs. Recent regulations of GCC firms have enabled significant progress toward the establishment of more independent boards of directors and the formation of specialized committees to provide firm oversight. We contribute to the investment decision and governance literature by showing that ICs assist firms with mitigating the risks of both under- and overinvestment, thereby improving investment efficiency. Our findings can be extend to other emerging markets and to Middle East, and North Africa. They also share similar features such as their political regimes and that follow the application of similar governance structure of OECD. Further work could examine the relations between investment efficiency, information asymmetry, and firm value in the GCC. Additionally, the roles of ruling family directors and government ownership could be examined in relation to the establishment of specialized board committees, including ICs and committees on risk, remuneration, and CSR. Such studies would be important in the context of the GCC given the rapid evolution of governance structures and capital markets in those countries.

Appendix IV

Variable Definitions and Measurement

Variables		Definition and Measurement
Dependent Variable		
Investment Models Model 1	=	We follow Biddle et al. 2009 by first estimating a firm specific model of investment as a function of growth opportunities (as measured by sales growth) and use the residuals as a firm specific proxy for deviations from expected investment. Investment i, t+1 = b0 + b1 Sales Growth i,t + ei, t+1 (Equation 1) Firms then classified based on the magnitude of the residuals (i.e., deviations from predicted investment) and use these groups as the dependent variable. Specifically, we sort firms based on the residuals from Equation (above) into quartiles. Firm-year observations in the bottom quartile (i.e., the most negative residuals) are classified as under-investing, observations in the top quartile (i.e., the most positive residuals) are classified as over-investing, and observations in the middle two quartiles are classified as the benchmark group. We estimate a multinomial logit model that predicts the likelihood that a firm will be in one of the extreme quartiles as opposed to the middle quartiles.
Model 2	=	Using C. Chen et al. (2012), firms are grouped into deciles based on firm' cash balance 0.1 (lowest) to 1 (highest), and leverage 1 (highest) to 0.1 (lowest). Then, firms with less than median decile value are denoted as under investment group (Investment

		(under). While firms with more than the median decile value are more denoted as over-investment group (Investment (Over). So based on Model 1: Over-Invest_D is equal to 1 if over-investment otherwise, zero, Under-Invest-D equal to 1 if firms are under investment, otherwise 0.
Independent variable:		
IC_D	=	1 if a firm adopt specialized Investment Committee, otherwise 0.
IC_EXP	=	Natural logarithm of number of directors with CFO or investment or chairman or CEO experience. If an IC director has any of these experience categories, that director is scored as 1. We then sum the number of IC directors with any of these experience categories and take the natural log of that value (IC_EXP). As an example, OOMS (Oman Oil marketing Company) has an IC comprising four directors with one director with CEO experience, 0 directors with CFO experience, 1 director with investment experience, and 1 director with chairman experience in the 2009 year. The scoring of experience for each director is mutually exclusive-in other words a director is scored as 1 if it has experience in at least one of the four categories of experience, otherwise 0.
Control Variable		
SIZE	=	Natural Log. of total assets.
BM	=	Book value scaled by market value of firms.
CFO	=	Cash from Operation scaled to total assets.
InstitOwn	=	Institutional Ownership%
SLACK	=	Total Cash and short-term investment scaled by total assets.
ROA	=	Return on Assets as profitability measure.
LEV	=	Total long-term and short-term scaled to total assets
TANG	=	Net Property, Plant and Equipment scaled by total assets.
DIV	=	1 if a firm has paid dividend, otherwise 0.
Firm_CG	=	Index of CG using Al-Hadi et al. 2015
AGE	=	Natural log. of firms' age calculated as the difference between the establishment date and current year.
ForOwn	=	The percentage of firm shares held by foreign investors.

All continuous variables are winsorized (reset) at the 1st and 99th percentiles.

Appendix V

The GCC Corporate Governance Codes and board Committees provisions.

Description	OMN	KSA	BAH	UAE	KUW	QTR
Compliance with corporate governance codes	Mandatory	Mandatory	Comply/ Explain	Mandatory	Mandatory from 2016	Comply/ Explain
Date of issuance of corporate governance codes	2002*	2006	2011	2007	2013	2009
Corporate governance codes provide separate section concerning the provisions of board committees	Yes	Yes	Yes	Yes	Yes	Yes
Specialized committee	Voluntary	Voluntary	Voluntary	-	Voluntary	Voluntary

formation						
Specialized committee formation: Under *board* or *management*	Board	Board	Board	-	Board	Board
Provisions provide clear instructions regarding reason, formatting, names of committee members, duties, rights and obligations of specialized board committees	Yes	Yes	Yes	-	Yes	Yes
Provision regarding the number of an independent directors on the board committees	Majority	-	Majority	Majority	-	-
Evaluation of specialized committee	Yearly	Periodically	Yearly	-	Periodically	-

*Corporate governance codes for Omani public listed firms have been updated in December, 2016.

Source: the GCC Corporate Governance Codes

Chapter 5

Investment committee, corporate cash holdings and corporate life cycle

5.1 Introduction

Large cash holdings by corporations have aroused significant interest among researchers and public alike. A recent article by New York Times magazine ponders over "why are corporations hoarding trillions?"[81] The article suggests that American businesses collectively hold $1.9 trillion in cash. In this context, some important questions that arise from this article are: first, what factors influence the cash holding by corporations in US and globally? And second whether these cash holdings vary during the corporations' life cycles?

Earlier research has widely addressed the first question mainly two different perspectives. The first view is from investment perspective (e.g., investment opportunities, financial distress and constraint, cash-investment sensitivity). For instance, Kaplan & Zingales (1997) find that firms classified as less financially

[81] https://www nytimes.com/2016/01/24/magazine/why-are-corporations-hoarding-trillions html?_r=0

constrained actually exhibit greater investment-cash flow sensitivity. However, Almeida, Campello, & Weisbach (2004) show that the cash flow sensitivity is positive for financially constrained firms, but statistically insignificant for financially unconstrained firms. The second view is based on agency cost and corporate governance paradigm. For example, Harford, Mansi, & Maxwell (2008) show that firms with weaker corporate governance structures have smaller cash reserves. Similarly, Dittmar & Mahrt-Smith (2007) show that better governed firms not only have large cash holdings but also the value of cash reserves is higher for those firms.[82]

In both strands of literature, however, (i.e., investment and corporate governance), scholars have alluded to life cycle effects on corporate cash holdings. For instance, Opler, Pinkowitz, Stulz, & Williamson (1999) show that firms with strong growth opportunities and riskier cash flows hold relatively high ratios of cash to total non-cash assets. Denis & Sibilkov (2010) argue that greater cash holdings allow firms that experience external financial constraints to avoid underinvestment and reduced growth. However, Chen (2008b) argues that investors are assertive regarding their cash in firms with abundance investment opportunities only if effective corporate governance protects their interests. Particularly, some specialized and effective monitoring's board-level committee can enhance shareholders wealth-maximization. For instance, the establishment of a specialized IC allows committee members to focus primarily on monitoring managerial investment decisions and requires managers to provide them with better quality reporting on investment projects (Ellis, 2011).

In this paper, mainly we investigate the second question, that we investigate the interplay effects between corporate governance (IC), firm life cycle and corporate cash holdings. Explicitly, we examine the effects of board's Investment Committee (thereafter IC) on cash holdings over the life cycle of public firms of the Gulf Cooperation Council (GCC) countries.[83]

[82] Their findings indicate that while $1.00 of cash in a poorly governed firm is valued at only $0.42 to $0.88, good governance approximately doubles this value.

[83] GCC countries constitute Kingdom of Saudi Arabia (KSA), Oman, Qatar, Kuwait, United Arab Emirates (UAE), and Bahrain. These countries have experienced unprecedented economic growth in the last decade. Their collective equity market capitalization stood at $954 billion in 2014. For more information, please see http://www khaleejtimes.com/business/markets/gcc-market-cap-shrinks-in-2015.

5.2 Literature review and hypotheses development

Most of the underpinnings for the existing literature on cash holding come from two main theories; pecking order theory and the free cash flow theory. The pecking order theory of (Myers & Majluf, 1984) suggests that firms finance their investments first from their retained earnings, second from debt and finally from equity. Building on the same notion, financing hierarchy theory suggests that firms will hold more cash when there are valuable investment opportunities. This implies that firms' cash holding needs vary over the firms' life cycles. However, the free cash flow theory of (Jensen, 1986) suggests that managers have incentives to increase the amount of cash for 'empire building'. Building on the "agency cost" paradigm, this theory postulates that managers have incentives to cause the firms to grow beyond the optimal level as this creates managerial powers and increased compensation (Jensen, 1986). The dichotomous implications of both theories makes the interplay of corporate governance mechanism and firms' life cycle important in the analysis of cash holdings.

The existing research on the cash holdings has exploited both arguments. For example, consistent with financing hierarchy theory of cash holding, Opler et al. (1999), Boyle & Guthrie (2003) argue that holding a high level of cash is necessary for potential investments, so the need of cash may depend on capital needs for investment opportunities. Similarly, Drobetz, Halling, & Schröder (2015) find that firms' need for cash holdings vary over the different life-cycle stages. They show that while firms in early stages and post-maturity stages hold large amounts of cash, cash ratios decrease when firms move towards maturity. However, Chen (2008a) argues that investors are confident regarding their cash in firms with abundance investment opportunities, only if effective corporate governance protects their interests. He documents that the impact of effective corporate governance on cash holdings will be negative for firms with limited investment opportunities (such as old firms), and positive for firms with abundance investment opportunities (such as newly listed firms).

Chen & Chuang (2009) assume product life cycle and a dynamic investment environment are important considerations as well. For instance, high-tech firms are usually smaller, younger, and face stronger competition than traditional firms (Carpenter & Petersen, 2002). To maintain hard-earned competitive advantages, high-

tech firms devote capital resources to risky investments and thus are often barely able to distribute cash to shareholders. As a result, these firms have to generate funds from either retained earnings or negotiated financiers. Because the potential return on risky investments is high for high-tech firms (Wasserman, 1988), without sufficient funds for capital investments, shareholders may suffer when firms pass up value-increasing investments. In these situations, whether to accept high levels of cash holdings becomes a trade-off for shareholders. To ensure that corporate funds are spent appropriately, investors may create contractual agreements such as the establishment of investment and risk committees (Van Den Berghe & Levrau, 2002). Thus, investors can actively rely on specialized and independent IC which directly oversees corporate investment decision making. Moreover, Filatotchev, Toms, & Wright (2006) argue that corporate governance parameters may be linked to transitions from one stage to another in the firm's life cycle. Similarly, Florackis (2008) finds that there are important interactions between internal governance mechanisms and firm growth opportunities.

The growth stage of a firm's life cycle which is evidenced by profit maximization, larger investments, positive operating cash flows (Spence, 1981) and a continued preference for debt over equity financing because of the tax deductibility of interest expenditure and loan fees (Barclay & Smith, 2005). Mueller (1972) also asserts that a firm in growth stage is no longer faces capital raising and thus investment uncertainty is reduced. Particularly, at this stage, there is a shift in the firm toward greater transparency and increased monitoring and control by external providers of resources (Filatotchev, Toms, & Wright, 2006). Furthermore, in the mature stage of a firm's life cycle generally results in a shift toward efficiency maximization, reduced uncertainty and declining investment expenditure relative to the growth phase, greater capital distribution to shareholders and enhanced governance structures (Barclay & Smith, 2005; Filatotchev et al., 2006).

We premise in this paper that specialized IC as part of the broader corporate governance mechanisms can steer the firm's optimal cash holdings decisions through different life cycle stages of firms by achieving the interest-alignment among different stakeholders. Based on the above discussion, we propose the following hypothesis:

H1: *Due to the interest alignment impact, IC induces a varying relation between cash holdings and different corporate life cycles*

5.3 Research design

5.3.1 Data and sample

The sample used in this study covers the period 2005 to 2013. We collect the data from mainly two sources. First, observations on ICs, corporate governance, and ownership structure are hand-collected from annual financial reports of non-financial public listed firms on KSA, UAE, Oman, Qatar, Bahrain and Kuwait stock exchanges filings and in some cases from the websites of these firms and Capital IQ filings. The second data source was the Standard & Poor's Capital IQ database. The data drawn from Capital IQ is used to calculate all accounting, financial and other control variables. After matching ownerships with financial data, we ended-up with a sample of 1,266 firm-year observations. All of the continuous disclosure variables are winsorized at the first and ninety-ninth percentiles to mitigate the influence of outliers.

Table 26: Sample selection

Total Observations	
Number of Non-financial firms available in S & P Capital IQ for the GCC countries	1670
Less:	
Joint listed firms observation	-72
Key control variables	-332
Total Observations	**1266**

Table 26: Panel B: Sample distribution based on country

	Year									
Country	2006	2007	2008	2009	2010	2011	2012	2013	Total	% Percent
BAH	0	1	1	6	7	8	4	5	32	0.03
KSA	33	50	66	75	80	85	88	89	566	0.45
KUW	1	1	1	4	6	8	9	10	40	0.03
OMN	28	39	40	39	38	66	65	66	381	0.30
QAT	2	4	5	9	14	15	15	14	78	0.06
UAE	4	12	17	21	27	30	29	28	168	0.13
Total	68	107	130	154	172	212	210	212	1265	1.00

Table 26: Panel C: Sample selection based on industry

	Year									
Industry	2006	2007	2008	2009	2010	2011	2012	2013	Total	% Percent

CONSD	5	13	11	17	15	27	25	27	140	0.11
CONSS	7	15	23	26	30	39	38	38	216	0.17
ENERG	6	8	11	13	13	13	14	14	92	0.07
HEALT	1	1	1	2	4	7	7	7	30	0.02
INDUS	16	25	33	40	44	48	48	47	301	0.23
INFOR	0	0	0	0	1	2	2	2	7	0.005
MATER	23	33	38	41	50	57	57	59	358	0.28
TELEC	4	6	6	7	7	9	9	8	56	0.04
UTILI	5	6	8	8	8	10	10	10	65	0.05
	67	107	131	154	172	212	210	212	1265	1.00

Table 26, shows that initially there are 1,670 firm-year observations on public listed non-financial firms. The exclusion of joint-listed firms (72 firm-years) and firms with missing control variables (332 firm-years) yields a final sample of 1,266 firm-year observations. Panel B shows that Saudi Arabia (KSA) represents the highest number of observations (45%), followed by Oman (OMN) and the United Arab Emirates (UAE), which together represent 43% of the observations with the remaining 12% representing Bahrain, Kuwait and Qatar. Panel C shows that materials sector firms represent about 28% of our sample, followed by industrial firms (23%), and consumer products firms representing 17% of the total sample.

5.3.2 Empirical model

To test H1, we estimate the following ordinary least squares (OLS) model for each life cycle stage (e.g., introduction, growth, maturity and decline). In doing so, we estimate the following equation:

$$\boldsymbol{Cash_{i,t,} = a_0 + a_1 IC\_D_{i,t} + a_2 SIZE_{i,t} + a_3 Q_{i,t} + a_4 LEV_{i,t} + a_5 CFO_{i,t} + a_6 NWC_{i,t} + a_7 CPAX_{i,t} + a_8 DIV_{i,t} + a_9 GOVOWN_{i,t} + a_{10} CEOOWN_{i,t} + a_{11} IND\_BSIZE_{i,t} + a_{12} LN\_BSIZE_{i,t} + a_{13} LN_{Age} + Year\ Dummies + Industry\ Dummies + Country\ Dummies + e_{i,t}}$$

Equation (1)

Then using Equation (1), we regress *IC_D* on different cash holding measures *(CASH/TA*, *Cash_NA*, *CASH_LN*) and the control variables for each life cycle stage which are (Introduction, Growth, Maturity, Shake-out, Decline stages) using Dickinson (2011) model.

5.3.2.1 Dependent variable: Proxy for cash holding

We investigate how the existence of an IC in a current year affects the firms cash holding. Prior studies have used different measures to proxy for corporate cash holding. We use three models of corporate cash holdings. In the first model *(Cash_NA)*, we follow Opler et al. (1999), Dittmar & Mahrt-Smith (2007) and Liu & Mauer (2011) which is calculated as the ratio of cash and marketable securities to net assets, where net assets are total assets minus cash and marketable securities. In the second model *(Cash_TA)*, we follow Bates, Kahle, & Stulz (2009), Bigelli & Sánchez-Vidal (2012), Francis, Hasan, & Wang (2014) and Azar, Kagy, & Schmalz (2016), as the ratio of cash and marketable securities to total assets. Finally, we use *(Cash_LN)* which denotes the natural logarithm of cash and marketable securities to total assets (see Faleye, 2004; Qiu & Wan, 2015). As a robastness check, we use *(Cash_TA)* and *(Cash_LN)* to reduce any potential endogeneity issues.

5.3.2.2 Independent variables (Investment Committee)

The main independent variable of interest in this study is denoted by the existence of an IC (IC_D). IC_D is a dichotomous variable that takes the value of 1 if the firm has a dedicated IC in year t, and 0 otherwise. We read full corporate governacne sections in annual reports. If firm does not incldue the corporate governace disclosures in annual report - we track the governance disclosures in company's official website, or in S&P Capital IQ fillings, or in local official stock market website. In case that corproate governacne disclosures are not found we assign missing IC for that firm in that year.

5.3.2.3 Corporate Life Cycle proxy

We use Dickinson (2011) model for corporate life cycle. Dickinson (2011) classifies all sample firms into different stages of the firm life cycle based on the following cash flow pattern classification. Where OANCF represents operating cash flows, IVNCF represents investing activity cash flows and FINCF represent financing activity cash flows):

1. INTRODUCTION: if OANCF < 0, IVNCF < 0 and FINCF > 0;
2. GROWTH: if OANCF > 0, IVNCF < 0 and FINCF > 0;
3. MATURITY: if OANCF > 0, IVNCF < 0 and FINCF < 0;
4. DECLINE: if OANCF < 0, IVNCF > 0 and FINCF ≤ or ≥ 0; and
5. SHAKE-OUT: the remaining firm years are classified into the shake-out stage.

As in Dickinson (2011), we use Shake-Out stage as a benchmark.

5.3.2.4 Control variables

Consistent with previous empirical research on the cash holding studies (e.g., (Azar et al., 2016; D. Chen, Li, Xiao, & Zou, 2014; Liu, Mauer, & Zhang, 2014; Megginson, Ullah, & Wei, 2014; Seifert & Gonenc, 2016), we controlled for several firm characteristics, industry factors, and country effect in our regression models. Given that large institutions in the GCC emerging markets are economically important and highly visible (Al-Shammari, Brown, & Tarca, 2008), the natural logarithm of total assets is used to control for firm size *(SIZE)*. We use Tobin's Q *(Q)* as a proxy for firm profitability, which is calculated as the sum of the market value of equity and the difference between book value of total assets and book value of equity in year *t*, scaled by the book value of total assets in year t_{-1}. A firm's leverage *(LEV)* is calculated as total debt scaled by total assets. Net working capital *(NWC)* denotes working capital less cash and equivalents, scaled by total assets. Similarly, *(CFO)* is used to control for cash from operations calculated as cash from operations scaled by total assets. Furthermore, we also control for capital expenditure *(CAPX)* calculated as the ratio of capital expenditure scaled by total assets. Also dividend *(DIV)* variable measures the effect of dividend policy on cash holding which is measured as total dividends scaled by total assets.

Consistent with Dittmar & Mahrt-Smith (2007), Chen (2008a) and Megginson et al. (2014), where they argue that governance and ownership structure have important effects on firm-level cash holding, we controlled for government ownership *(Gov_Own)*. We coded 1 if government owns equity in a firm, and zero otherwise, CEO equity ownership *(CEO_Own)* was coded 1 if the CEO of the firm owns equity, and zero otherwise, board independence *(IND_BSIZE)* is scaled by board size, as well as, the natural logarithm of board size is used to control for board

size *(BSIZE)*. We include firm age *(AGE)* measured as the natural logarithm of the number of years since the incorporation of the firm. Finally, we include the year, industry and country dummies in the regression equation. The findings are consistent with the control variables used in all models and panels, i.e., size *(SIZE)*, firm profitability *(Q)*, leverage *(LEV)*, cash flow from operations *(CFO)*, capital expenditure *(CAPX)*, dividends *(DIV)*, are negatively associated with firms' cash holdings. In contrast, government ownership *(GOVOWN)*, and board size *(BD_LN)* are positively associated with firms' cash holdings. The sign and significance of the control variables are generally consistent with prior studies of cash holdings (Azar et al., 2016; Megginson et al., 2014).

5.4 Results discussion

5.4.1 Descriptive statistics

Table 27 reports the summary statistics for the variables included in the regression models. The mean values for the *Cash_TA, Cash_NA, Cash_LN* variables are 0.12, 0.17 and 2.69, with a standard deviation of 0.12, 0.26 and 1.21, respectively. The mean (median) IC (*IC_D*) is 0.17 (0.00), with a standard deviation of 0.37. Approximately, 17% of the non-financial firms in the GCC have a voluntarily IC (*IC_D*), as compared to some 38% of GCC firms that have voluntarily formed risk-management committees (Al-Hadi, Hasan, & Habib, 2016). Finally, we find that the values of the mean and median of the control variables are consistent with recent literature on emerging markets within the GCC region (Al-Hadi et al., 2016; Eulaiwi, Al-Hadi, Taylor, Al-Yahyaee, & Evans, 2016).

Table 27: Descriptive Statistics and Univariate t-test

Variable	Mean	S.D.	0.25	Mdn	0.75
Cash $(m)	276.40	1308.60	6.20	24.20	108.30
CASH_TA	0.12	0.12	0.03	0.07	0.16
CASH_NA	0.17	0.26	0.04	0.08	0.19

Cash_LN	-2.69	1.21	-3.40	-2.61	-1.83
IC_D	0.17	0.37	0.00	0.00	0.00
SIZE	5.86	1.84	4.72	5.88	6.95
SIZE $ (m)	2352.00	8278.20	111.70	358.40	1047.50
Q	1.95	1.26	1.13	1.54	2.35
LEV	0.23	0.22	0.03	0.18	0.37
NWC	1.40	0.82	0.91	1.34	1.72
CFO	0.09	0.10	0.03	0.08	0.15
CAPX	0.07	0.08	0.02	0.04	0.10
DIV	-0.04	0.05	-0.06	-0.02	0.00
GOVOWN	0.55	0.50	0.00	1.00	1.00
CEOOWN	0.34	0.47	0.00	0.00	1.00
IND_BSIZE	0.70	0.33	0.44	0.71	1.00
BD_LN	2.05	0.22	1.95	2.08	2.20
BSIZE (No)	7.99	1.78	7.00	8.00	9.00
AGE	2.92	0.70	2.57	3.05	3.47
AGE (year)	22.82	13.23	13.00	21.00	32.00

5.5 Regression results:

Based on hierarchy theory of cash holding, we argue that firms in growth and maturity stages of their life cycle can voluntarily adopt an IC to effectively manage their investments and growth opportunities. The regression results shown in Table 28 suggest that ICs during the growth and maturity stages of the firm life cycle (Dickinson model) are significantly positively associated with cash holdings, while the introduction and decline stages of firms' life cycle are not associated with all proxies of cash holdings. For instance, in both stages (Growth and Maturity) we find the coefficients of IC_D and corporate cash holdings (*Cash_NA*) are positive and significant of (*0.0576 and 0.0684*) at (p<.10 or better), while in (Introduction and Decline) stages the coefficients are not significant of (*0.0482 and -0.0296*). In economic term, the firm with IC_D observes more cash holding in Growth and Maturity compared to Shake-out stage of 50 and 60 basis points. This supports our hypothesis that the impact of corporate governance and cash holding varies based on the corporate's life cycle.

We also find that this effect is consistent in all our models even when we use other proxies of cash holdings (see Table 29). These results support our assumption that qualified ICs have preference to hold more cash, considering that cash represents a valuable source of investment funds for business growth opportunities during the

periods of growth and maturity. In addition, because insufficient funds may lead to relinquishing investment opportunities, shareholder wealth could be adversely affected by these cash holding decisions. Finally, cash holding decisions as well as identifying investment and growth opportunities are significantly related to the presence of IC owing to their risk management oversight. Our results are consistent with Opler et al. (1999) and Ozkan & Ozkan (2004) that cash holding is an important determinant of firms' growth opportunities.

Table 28: Regression analysis: The Interaction between IC and RETA and its impact on corporate cash holdings

$$\boldsymbol{Cash\_NA_{i,t,} = a_0 + a_1 IC\_D_{i,t} + a_2 SIZE_{i,t} + a_3 Q_{i,t} + a_4 LEV_{i,t} + a_5 CFO_{i,t} + a_6 CPAX_{i,t} + a_7 DIV_{i,t} + a_8 GOVOWN_{i,t} + a_9 CEOOWN_{i,t} + a_{10} IND\_BSIZE_{i,t} + a_{11} BD\_LN_{i,t} + a_{12} + Year\ Industry\ Countrie\ Dummies + e_{i,t}}$$

	Model1	Model 2	Model3	Model4
DV		*Cash_NA*		
Stages	INTRO	GROWTH	MATURITY	DECLINE
IC	**0.0482**	**0.0576***	**0.0684*****	**-0.0296**
	(0.74)	**(1.78)**	**(2.70)**	**(-0.22)**
SIZE	-0.0112	-0.0073	-0.0146**	-0.0713
	(-0.84)	(-0.95)	(-2.02)	(-0.79)
Q	-0.0287*	0.0728*	-0.0004	-0.0396
	(-1.81)	(1.90)	(-0.04)	(-0.56)
LEV	-0.0465	-0.0160**	-0.0069	-0.1183*
	(-1.64)	(-2.05)	(-1.20)	(-2.05)
CFO	0.0486	-0.1696	0.0419	-0.5797**
	(0.18)	(-0.90)	(0.44)	(-2.61)
CPAX	-0.1070	-0.0070	-0.1266**	1.0319
	(-0.96)	(-0.24)	(-2.58)	(0.71)
DIV	-0.4674	0.2528	-0.4936**	-2.3099
	(-0.92)	(0.45)	(-2.58)	(-0.53)
GOVOWN	-0.0499	0.0506**	0.0722***	0.0479
	(-1.44)	(2.11)	(3.51)	(0.39)
CEOOWN	0.0596	-0.0012	0.0009	0.0223
	(1.24)	(-0.05)	(0.05)	(0.25)
IND_BSIZE	-0.0076	0.0521	0.0130	-0.3918

	(-0.13)	(1.24)	(0.32)	(-1.61)
BD_LN	0.2747***	0.1528**	-0.0774*	-0.0265
	(2.94)	(2.16)	(-1.91)	(-0.07)
Intercept	-0.3328*	-0.3524*	0.5978***	0.5668
	(-1.80)	(-1.73)	(3.96)	(0.54)
YEAR FE	YES	YES	YES	YES
IND FE	YES	YES	YES	YES
COUNTRY FE	YES	YES	YES	YES
N	48	291	553	31
adj. R-sq	0.1881	0.2140	0.1675	0.6984

Cash_NA is ratio of cash and marketable securities to net assets, where net assets are total assets minus cash and marketable securities; *IC* is1 if a firm adopt specialized Investment Committee, otherwise 0*; Size* is the natural logarithm of total assets; *Q* is a sum of the market value of equity and the difference between book value of total assets and book value of equity in year *t*, scaled by the book value of total assets in year $t_{-1;}$ *Lev* is the total long-term and short-term scaled to total assets; *CFO* is the cash from operation scaled to total assets; *CAPX* is the ratio of capital expenditure, scaled by total assets; *DIV* is total dividends scaled by total assets; *GOVOWN* is equal one if a firm has government ownership, otherwise zero; *CEOOWN* is equal one if a firm has CEO ownership, otherwise zero, *IND_BSIZE* is proportion of total independent directors to total board size, *BD_LN* is the natural logarithm of total number of board of director.

TABLE 29: Association between alternative proxies for Cash Holdings and IC for each Corporate Life Cycle using Dickinson (2011) Model

	Model1	Model 2	Model3	Model4	Model1	Model 2	Model3	Model4
	CASH_TA				CASH_LN			
Stages	INTRO	GROWTH	MATURITY	DECLINE	INTRO	GROWTH	MATURITY	DECLINE
IC	**0.0057**	**0.0268****	**0.0261****	**-0.0078**	**0.2323**	**0.5096*****	**0.2039**	**-1.2589**
	(0.22)	**(2.04)**	**(2.05)**	**(-0.60)**	**(0.47)**	**(3.23)**	**(1.57)**	**(-1.60)**
SIZE	-0.0051	-0.0020	-0.0097**	-0.0185	0.9764***	1.0834***	0.8985***	0.8848
	(-0.67)	(-0.50)	(-2.31)	(-1.96)	(5.71)	(19.66)	(20.42)	(1.78)
Q	-0.0087	0.0227***	0.0038	0.0110	-0.2604	0.2670***	0.0709	0.3460
	(-1.09)	(2.79)	(0.71)	(1.32)	(-1.48)	(4.81)	(1.42)	(0.88)
LEV	-0.0121	-0.0103**	-0.0035	-0.0020	0.0668	-0.1650***	0.0083	-0.1196
	(-0.86)	(-2.59)	(-0.98)	(-0.26)	(0.21)	(-2.60)	(0.13)	(-0.34)
CFO	-0.0794	-0.0469	0.0887*	0.0553	-2.2989	-0.0499	1.0538	1.1970
	(-0.46)	(-0.55)	(1.85)	(1.36)	(-0.78)	(-0.05)	(1.45)	(0.86)
CPAX	0.0177	0.0064	-0.0548**	0.9752***	0.5558	0.1831	-1.1326	12.1305
	(0.28)	(0.37)	(-2.09)	(4.86)	(0.31)	(0.62)	(-1.47)	(1.05)
DIV	-0.3699	0.1073	-0.1185	-0.3526	-17.8293**	1.6925	-1.4484	-43.7697
	(-1.33)	(0.49)	(-1.19)	(-0.69)	(-2.52)	(0.64)	(-1.26)	(-1.81)
GOVOWN	-0.0174	0.0078	0.0332***	-0.0187	-0.3336	-0.1538	0.2995***	-0.4017
	(-1.11)	(0.77)	(3.37)	(-1.07)	(-1.00)	(-1.11)	(2.66)	(-0.44)
CEOOWN	0.0385	0.0153	-0.0108	0.0092	0.6349	0.2145	-0.0600	0.2816
	(1.47)	(1.47)	(-1.11)	(0.62)	(1.19)	(1.62)	(-0.50)	(0.45)
IND_BS	-0.0071	0.0474**	-0.0140	-0.0248	-1.1519*	0.8859***	-0.4141*	-1.0208
	(-0.26)	(2.33)	(-0.70)	(-0.61)	(-1.88)	(3.18)	(-1.79)	(-0.68)
BD_LN	0.0691	0.0747***	-0.0240	0.1275*	-0.0968	0.9145**	-0.1517	2.7713
	(1.21)	(2.79)	(-1.18)	(2.40)	(-0.07)	(2.43)	(-0.59)	(1.12)
Intercept	-0.0539	-0.1455**	0.2952***	0.0829	-1.7993	-6.1607***	-1.1649*	-3.0855
	(-0.46)	(-2.34)	(4.38)	(0.72)	(-0.66)	(-6.50)	(-1.69)	(-0.48)
YEAR FE	YES	YES	YES	YES	YES	YES	YES	YES
IND FE	YES	YES	YES	YES	YES	YES	YES	YES
COUNT. FE	YES	YES	YES	YES	YES	YES	YES	YES
N	48	291	553	31	48	291	553	31
adj. R-sq	0.0991	0.1456	0.1453	0.8067	0.8443	0.8221	0.7587	0.9027

CASH_TA is the ration of cash and marketable securities to total Ass assets; *CASH_LN* is The natural logarithm of cash and marketable securities to total assets *Size* is the natural logarithm of total assets; *Q* is a sum of the market value of equity and the difference between book value of total assets and book value of equity in year *t*, scaled by the book value of total assets in year t_{-1} *Lev* is the total long-term and short-term scaled to total assets; *CFO* is the cash from operation scaled to total assets; *CAPX* is the ratio of capital expenditure, scaled by total assets; *DIV* is total dividends scaled by total assets; *GOVOWN* is equal one if a firm has government ownership, otherwise zero; *CEOOWN* is equal one if a firm has CEO ownership, otherwise zero, *IND_BSIZE* is proportion of total independent directors to total board size, *BD_LN* is the natural logarithm of total number of board of directors.

We further look at the interaction of IC and age of the firm. We follow the model below:

$$Cash_{i,t,} = a_0 + a_1 IC\_D_{i,t} + a_2 AGE + a_3 AGE\ X\ IC_D + a_4 SIZE_{i,t} + a_5 Q_{i,t} + a_6 LEV_{i,t} + a_7 CFO_{i,t} + a_8 NWC_{i,t} + a_9 CPAX_{i,t} + a_{10} DIV_{i,t} + a_{11} GOVOWN_{i,t} + a_{12} CEOOWN_{i,t} + a_{13} IND\_BSIZE_{i,t} + a_{14} LN\_BSIZE_{i,t} + a_{15} LN_{Age} + Year\ Dummies + Industry\ Dummies + ountry\ Dummies + e_{i,t}$$ Equation (2)

The results reported in Table 30 show that older firms, on average, hold less cash than new firms. For instance, the coefficients of corporate's Age (number of years since the establishment) in all corporate cash holdings proxies (CASH_NA, CASH_TA and CASH_LN) are negative and significant of (*0.0353, 0.0232 and 0.3757)* at (p<.01), while the interaction of IC_D and Age is (*0.0763*) in Model 1 (CASH_NA) is negative and significant at (p<.05). This is consistent with our main argument that when ICs are effective in exploiting growth opportunities, higher levels of cash holdings are acceptable in the early stage of these firms. Consequently, because of higher business risk, it is difficult for new firms to obtain external financing compared to older firms. We also find empirical evidence to confirm that the effect of ICs on cash holdings differs based on firm life cycle stages (Age).

Table 30: Association between Cash Holdings and interaction between (IC and Firm's Age)

	Model1	Model 2	Model3
	CASH_NA	*CASH_TA*	*CASH_LN*
IC	0.1239***	0.0342***	0.2904**
	(5.43)	**(3.21)**	**(2.21)**
AGE	**-0.0353*****	**-0.0232*****	**-0.3757*****
	(-2.66)	(-3.74)	(-4.92)
IC * AGE	**-0.0763****	**-0.0096**	**0.0734**
	(-2.45)	**(-0.66)**	**(0.41)**
SIZE	-0.0142***	-0.0049**	1.0118***
	(-2.79)	(-2.08)	(34.53)
Q	0.0221***	0.0107***	0.1289***
	(4.01)	(4.14)	(4.06)
LEV	-0.0176**	-0.0088**	-0.1523***
	(-2.20)	(-2.35)	(-3.31)

CFO	-0.1195*	0.0235	0.7658**
	(-1.85)	(0.78)	(2.06)
CPAX	-0.0026	0.0029	0.1115
	(-0.07)	(0.15)	(0.49)
DIV	-0.5143***	-0.1671**	-1.5190*
	(-3.60)	(-2.50)	(-1.85)
GOVOWN	0.0757***	0.0254***	0.1298*
	(5.84)	(4.20)	(1.74)
CEOOWN	0.0119	0.0031	0.0641
	(0.86)	(0.48)	(0.81)
IND_BS	0.0351	0.0094	0.0711
	(1.29)	(0.74)	(0.45)
BD_LN	-0.0452	-0.0084	0.0802
	(-1.45)	(-0.58)	(0.45)
Intercept	0.4026***	0.1785***	-2.7373***
	(4.53)	(4.30)	(-5.36)
YEAR FE	YES	YES	YES
IND FE	YES	YES	YES
COUNTRY FE	YES	YES	YES
N	1029	1029	1029
adj. R-sq	0.1642	0.1405	0.7806

Cash_NA is ratio of cash and marketable securities to net assets, where net assets are total assets minus cash and marketable securities *CASH_LN* is The natural logarithm of cash and marketable securities to total assets; *Cash/TA* is The ration of cash and marketable securities to total Ass assets; *IC* is1 if a firm adopt specialized Investment Committee, otherwise 0; AGE is the natural logarithm of firms' age calculated as the difference between the establishment date and current year *Size* is the natural logarithm of total assets; *Q* is a sum of the market value of equity and the difference between book value of total assets and book value of equity in year *t*, scaled by the book value of total assets in year $t_{-1;}$ *Lev* is the total long-term and short-term scaled to total assets; *CFO* is the cash from operation scaled to total assets; *CAPX* is the ratio of capital expenditure, scaled by total assets; *DIV* is total dividends scaled by total assets; *GOVOWN* is equal one if a firm has government ownership, otherwise zero; *CEOOWN* is equal one if a firm has CEO ownership, otherwise zero, *IND_BSIZE* is proportion of total independent directors to total board size, *BD_LN* is the natural logarithm of total number of board of directors.

5.6 Conclusion

We investigate the impact of ICs on cash holdings over the life cycle of public firms of the six GCC countries. The empirical results suggest that the role of ICs and their effect on cash holdings decisions significantly differs across the firm life cycle stages. In particular, we find that while the cash holding is higher in the growth and maturity stages, it is lower in the introduction and decline stage. Since firms in growth and mature stages are most likely to seek for growth opportunities, IC

members with greater monitoring and financial expertise increase the level of cash reserve to fund future investment opportunities. These results imply that ICs can be an effective tool in optimal allocation of resources through different stages by aligning the interests of investors and managers.

This is the first paper that examines that role of IC on the cash holding during different stages of firms' life cycles, especially in the emerging markets context. Our empirical evidence contributes to the growing body of literature that focuses on corporate governance and cash holdings through different stages of the firm life cycles. The results of this study should be informative to various capital market participants such as shareholders, regulators, government, auditors and financial analysts, especially concerning why firms should establish ICs. In particular, the results of this study would be useful for regulators when modifying and/ or establishing corporate governance codes, including the voluntary formation of board committees such as ICs and the benefits associated with them. It is expected that the findings of this study are instructive and applicable to other countries in the Middle East region, due to their cultural, social, political and economic similarities.

The study does, however, have some limitations and suggest a number of avenues for future research. The role of royal family involvement in management, government ownership, and institutional ownership could be examined in relation to the establishment of specialized board committees such as ICs and executive committees. It is important also to examine the role of other committees (such as risk committee, research committee, audit committee, etc) on corporate cash holding over various stages of firm life cycles. We leave this to future research.

Appendix VI

Variable Definitions and Measurement

Variables		Definition and Measurement
Dependent Variable:		
Cash Holdings Models:		
Cash/TA	=	The ration of cash and marketable securities to total Ass assets.
Cash/NA	=	The ratio of cash and marketable securities to net assets, where net assets are total assets minus cash and marketable securities.
Cash/LN	=	The natural logarithm of cash and marketable securities to total assets.
Independent variable:		
IC_D	=	1 if a firm adopt specialized Investment Committee, otherwise 0.
Control Variables:		
SIZE	=	Natural logarithm of total assets.
Q	=	The sum of the market value of equity and the difference between book value of total assets and book value of equity in year *t*, scaled by the book value of total assets in year t_{-1}
LEV	=	Total long-term and short-term scaled to total assets.
NWC	=	Total current assets minus total current liabilities scaled by total assets.
CFO	=	Cash from Operation scaled to total assets.
CAPX	=	The ratio of capital expenditure, scaled by total assets.
DIV	=	Total dividends scaled by total assets.
GOVOWN	=	1 if a firm has government ownership, otherwise 0.
CEOOWN	=	1 if a firm has CEO ownership, otherwise 0.
IND_BSIZE	=	Proportion of total independent directors to total board size.
BD_LN	=	Natural logarithm of total number of board of directors.
AGE	=	Natural logarithm of firms' age calculated as the difference between the establishment date and current year.

Chapter 6

Conclusion and directions for future research

6.1 Introduction

Corporate governance policies and structures in emerging markets such as the GCC region vary from those in developed countries due to a number of factors relating to the geo-political and religious dynamics of member countries. The pace of development of governance structures varies across member countries and is likely to differ from governance levels in developed countries although the GCC model of corporate governance practices has been influenced by the Anglo-American model. However, the institutional, cultural and religious characteristics of the GCC are key ingredients that implicitly or explicitly underpin the effectiveness of corporate governance systems and practices. Corporate governance is constantly receiving the required institutional and legal considerations aimed at improving the governance standards in the GCC, this reflects in recent amendments to corporate governance regulations despite the existence of "comply or explain" concept in some GCC countries. The thesis is made up of four interconnected topics on corporate governance in the Gulf Corporation Council (GCC). The four essays in this thesis specifically examine the roles and effects of board multiple directorships and family ownersip, joint audit and cost of debt capital, investment committee characteristics, investment efficiency, corporate life cycle and corporate cash holdings.

6.2 Summary of findings

This thesis examined a number of important and interesting issues related to corporate governance, ownership structure and capital structure of GCC firms in four essays. **The first essay** investigates the association between outside board

directorships and family ownership concentration. Using a sample of 1091 firm-year observations of non-financial publicly listed firms from the GCC during the 2005 to 2013 period, the study finds a positive association between family ownership and the number of outside directorships held by board members. This finding is consistent with the notion that family ownership reduces a board's monitoring capabilities. The study also test whether the recent corporate governance reforms in the GCC designed to protect investors and minority shareholders affect firms' incentives to establish a board nomination committee (NC). It was found that the existence of a board NC and the quality and characteristics of NC membership act to suppress the positive association between outside directorships and family ownership. The results are robust to the use of alternative measures of outside directorship and family ownership and models that test for endogeneity. Overall, the results suggest that the institutional specificities of emerging economies such as those in the GCC can work against sustained high levels of multiple directorships, which could impair the quality of corporate governance.

The second essay investigates the association between joint-audit and cost of debt for a sample of non-financial publicly listed firms from the GCC countries. We attempt to shed further insights into this debate, using data from GCC countries. We document a significantly negative effect of joint audit on cost of debt in GCC countries. This effect is most pronounced in cases where at least one of the joint audit firms is a Big 4 auditor. We then investigate whether political connections with royal families moderate the association between joint audit and the cost of debt. Our results suggest that the beneficial effects of joint audits in terms of lower cost of debt are greater in firms with such political connections.

The third essay investigates the association between board investment committee characteristics and corporate investment efficiency. Using a sample of industrial firms from six GCC countries over the 2005–2013 period, the study find that the existence of an investment committee reduces both under- and overinvestment of these firms. The study also finds that financial expertise of committee members positively affects firms' investment efficiency. These findings are consistent with the assertion that a board investment committee assists with the monitoring and control of firms' investments. The study also finds that the existence of an investment

committee is likely to reduce over- and underinvestment in firms with high levels of foreign ownership concentration. The tenets of agency theory suggest that the existence of an investment committee aligns a firm's investment activities with the objective of shareholder wealth maximization. These results are robust based on additional tests that use alternative measures of investment efficiency and tests relating to self-selection bias and endogeneity.

The final essay examine the association between voluntary formation of board investment committee (IC) and corporate cash holdings of firms over the corporate life cycle stages for a large sample of Gulf Cooperation Council (GCC) firms over the 2005–2013 period. The paper finds that existence of an IC increases corporate cash holdings in growth and maturity stages of firm, compared to introduction/old (decline) stages. This suggests that each stage would manifest integral complementarities among governance, investment strategy and corporate decision making; that corporate complexity would cause each stage to exhibit certain significant differences from all other stages. These results have important implications for policy makers and regulators. The findings are robust to various econometrics specifications.

6.3 Recommendations to policymakers, regulators and investors:

The recent global financial crisis has exposed major failings in governance and regulation, which have undermined trust in public and private institutions alike. Government policy makers and regulators can help to improve corporate governance policies, reduce economic uncertainty, help to attract institutional and foreign investors and capital investment. In this stream, the role of policy makers (managing market authorities) is now more important than ever, as they seek to support economic growth, investment quality and regulatory reforms, creating job and strengthening a country's position in the global market. Given that strong economic policy provides a level of stability and assists in minimizing expropriation risks and maximizing investment returns, investors are more likely to invest in highly stable

market environments. Drawing upon governance and commercial models from a wide range of developed countries, this research identified a number of recommendations that policy makers and regulators can undertake to improve corporate governance strategies, investment opportunities, reduce investment costs and attract innovative technologies and capital investment. In addition, due to the organisational challenges involved in less developed markets such as these in the GCC countries, the managing authorities can play an important role by building organisational infrastructure or approving strong organisational networks to encourage both operators and investors to resolve some policy and technical issues. The effective use of codes and regulation to achieve better social, environmental and economic outcomes is advanced by governments in many GCC countries. Finally, government funded programmes designed to improve commercial investments have been established in the GCC. The tax free policies was set up in all GCC markets in order to attract investors and fund the development of infrastructures of which had either little or no tax coverage.

6.4 Limitations of the study:

Although this research was well prepared, reached its aims, there were a number of unavoidable limitations and shortcomings. Due to the limitations of determined time for doctoral study, the main data were collected within a relatively short time period. The provision of more time to collect data, read, ponder and analyse would have been useful for developing models consistent with an emerging market context. It would be better if it was done in a longer time to translate the findings may provide some thinking but this was only ever passing in the circumstances. Data population of this study is relatively small, only six GCC countries over the period 2005-2013. This limitation might not represent the majority of the firms accounting activities of the time series level. More time given to add another MENA countries and extending the period would help to cover the majority of public listed firms among MENA countries and enhance the generalizability of our findings. Furthermore, since the variables designed to measure the corporate governance attitude among GCC markets, firms lacking corporate governance sections in their annual reports are

reduced our sample size and excluded from our dataset. Hence, it seems not to provide enough evidence of the firms' actual behaving to disclose their adapting of governance codes in their annual reports. The selection of this data are only limited for non-financial listed firms since we exclude, for example, financial firms from our sample, which may account for some of the discrepancies among findings. Finally, the weak corporate governance codes might discourage firms' motivation to introduce more disclosures about their adaptation of rules and regulations and this have been clear in the un-consistency in the firm's annual report.

6.5 Future research directions

The thesis noted a number of areas for future research. The GCC countries provide an ideal setting in which to examine the role of ICs and their effects on investment efficiency, as it is likely that agency and information asymmetry problems are entrenched in these countries. In particular, the GCC countries have experienced rapid development of corporate governance codes, regulations, capital markets, and international trade over the past 15 years, which has affected the establishment and reliance on specialized committees such as ICs. Recent regulations of GCC firms have enabled significant progress toward the establishment of more independent boards of directors and the formation of specialized committees to provide firm oversight. This therefore provide an interesting context for future studies to examine how these changes affect firm performance, audit quality or earnings management.

Further studies on investment committee characteristics, corporate life cycle, investment efficiency and corporate cash holdings can be extended to other emerging markets in Africa and Asia. For example, some Asian countries (e.g., Thailand, Malaysia etc.) and some African countries (e.g., North Africa) also share similar features such as their political regimes and that follow the application of similar governance structure of OECD. Further work could therefore examine the relations between investment efficiency, information asymmetry, and firm value. Additionally, the roles of ruling family directors and government ownership could be examined in relation to the establishment of specialized board committees, including ICs and committees on risk, remuneration and Corporate Social Responsibility

(CSR). Such studies would be important in the context of the GCC given the rapid evolution of governance structures and capital markets in those countries.

Finally, the four essays primarily focused on the effect of family ownership as a firm capital structure on director busyness. Many other types of ownership could also be considered, such as institutional, state or foreign ownership. The researcher therefore encourage future researchers to consider such issues as whether the extent of managerial ownership influences the appointment of busy directors and it in turn affect the monitoring quality the firms.

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